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THE QUARTERLY JOURNAL OF ECONOMICS

MAY, 1931

THE FEDERAL RESERVE ACT AND FEDERAL RESERVE POLICIES¹

SUMMARY

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I. INTRODUCTION

THE object of this paper is to trace the evolution of the Federal Reserve Act and to consider and evaluate Federal Reserve policy in the light of the intentions of the framers of the Act and accepted theory of central banking. The present is an opportune time, for Congress, aroused by recent developments, is prepared to revise the Act; and the recent appearance in print of the views of two great figures in the development of the

1. The Harvard University Committee on Economic Research has made it possible for me to undertake a study of the Federal Reserve Act and Federal Reserve Policy. The views here presented will be expressed more fully in a forthcoming book.

The following abbreviations are used: Congressional Record (C. R.), Federal Reserve Bulletin (F. R. B.), Annual Report of the Federal Reserve Board (F. R. A.).

System, and of searching discussions of certain aspects of policy in Keynes' *Treatise* and Rieffler's study of money rates justify a survey of the policies of the first fifteen years of the System's history.²

In the years of their contact with the System, Warburg and Strong both had the genius to suggest and contend for those policies which were later to have the sanction of approval. They both were among the first to point out the necessity of concentrating the country's gold supplies; and Warburg was in the forefront of the vigorous campaign to achieve that end.³ His conception of a supervisory and coördinating, rather than a dominating and bureaucratic Board, ultimately was accepted.⁴ In the formative period, he saw more clearly than anyone else that normally there would be large fluctuations in the magnitude of operations of reserve banks; and that money conditions rather than considerations of gain should be the index of policy.⁵ Strong and Warburg were aware that part of the gold received in the War and post-War periods was held in trust for Europe; but they also realized that the determination of policy by fluctuations of reserves had the important sanction of popular understanding.⁶ The acceptance of Strong's suggestions concerning discount policy in 1919 and 1920-21 would have saved the System much embarrassment later.⁷ He was among the first to see

2. P. Warburg, *The Federal Reserve System*. Two volumes, 1930; B. Strong, *Interpretations of Federal Reserve Policy*, edited by W. R. Burgess, 1930; J. M. Keynes, *A Treatise on Money*. Two volumes, 1930; W. W. Rieffler, *Money Rates and Money Markets*, 1930. Also see the *Federal Reserve System. Report of the Banking and Currency Committee. Chamber of Commerce of the United States*, 1929; H. L. Reed, *Federal Reserve Policy, 1921-30*, 1930.

3. Warburg, I, pp. 149-51, 729; Strong, p. 69.

4. Warburg, I, p. 479.

5. *Ibid.*, I, pp. 288, 449-50, 632; II, pp. 829-33.

6. *Ibid.*, I, p. 466.

7. Strong, pp. 85, 134.

clearly the difficulty of prohibiting the use of Federal Reserve credit for speculative purposes,⁸ the importance of the magnitude of indebtedness in the determination of credit policies,⁹ the desirability of uniform rates for all types of paper,¹ and the necessity of taking vigorous measures to discourage the use of reserve funds for speculative purposes.² He shared Warburg's preference for the use of the discount rate as a measure of control over less democratic methods of control.³ He was, however, aware of the difficulty of enforcing penalty rates in the United States.⁴

II. ORIGINS OF THE ACT

In this section, dealing summarily with a much controverted subject, my conclusion in general is that Glass and his colleagues on the Banking and Currency Committee of 1913 provided for a regional system in which control occupied a relatively unimportant place, but that a measure of control was introduced through the acceptance of suggestions in the Aldrich Plan, and through the influence of Bryan and the Senate. In the Federal Reserve Act of 1913 there remained but a relatively small proportion of the provisions which had been in the early drafts of the Glass Bill. Warburg exercised an important influence through his work on the Aldrich (National Monetary Commission) Bill and through his direct contact with the Senate Banking and Currency Committee.⁵ Glass and Willis deserve a large share of

8. *Ibid.*, pp. 126, 183.

9. *Ibid.*, pp. 256-57.

1. *Ibid.*, pp. 123-24.

2. *Ibid.*, p. xxii.

3. *Ibid.*, pp. 132, 191-93; Warburg, I, pp. 142, 275, 474.

4. *Ibid.*, pp. 190-93.

5. Warburg, I, pp. 114-15, 120-25, App. I; C. Glass, *An Adventure in Constructive Finance* (1926), p. 210; R. L. Owen, *The Federal Reserve Act* (1919), pp. 81-82, 89.

the credit for the passage of the Federal Reserve Act, for they carried the legislation through under very difficult conditions; but they have underestimated their obligations to Aldrich, Warburg and others.⁶ Also, it is difficult to account for the opinion currently held that the Senate's influence was not great. In large part, misinterpretations of the Federal Reserve Act are the result of the failure to consider that two different versions of the legislation and its history have been given, one supported by Glass and his co-workers, and the other by various Senators — both those who supported the Aldrich Plan and the radical Senators who were anxious to confer a maximum degree of control on a Government Board.⁷ The Glass element put the emphasis on elasticity of currency, accommodation, and regionalism rather than on control.⁸

While Glass said in 1913, that "scarcely a power enumerated in Section 12 of this Bill which has not been exercised by the Government for 50 years," Senators Reed and O'Gorman commented on the extent to which centralization and control had been introduced.⁹ Willis and Glass agreed that the Senate had yielded in con-

6. H. Willis, *Federal Reserve System* (1923), pp. 84-85; Glass, p. 24. Many provisions in the Federal Reserve Act — provisions in Sections 4, 7, 13 and 14 are especially to be noted — were taken verbatim from the Aldrich Bill. Also, the framers apparently were indebted to the National Monetary Commission for several important provisions in Sections 4, 14, 16, 18 and 21 inserted in the Act by the Senate.

7. This strange alliance in the Senate bore fruit in the increased authority bestowed on the Board. In large part, additional powers were bestowed to protect member banks against arbitrary action of reserve banks. C. R. LI, pp. 173, 526, 1220-24; Senate Report No. 133 (1913), pp. 112-13 and Senate Document No. 264 (1913). (Comparative prints of Amendments of Senators Owen and Hitchcock), Senate Hearings, Banking and Currency Committee (1913), I, pp. 827-28, 868; III, p. 2067.

8. Glass's regional principle is clearly stated in the report of his Committee. House Report No. 69 (1913), pp. 12, 18.

9. C. R., LI, pp. 174, 665, 4644; House Hearings, Banking and Currency Committee (1913), pp. 15, 207.

ference on all but a few contested points, and Willis informed the Senate Banking and Currency Committee that the House Bill was substantially the same as the first draft except that "many minor details were changed."¹

Several early drafts of the Federal Reserve Act are published in appendices in Willis's book on the Federal Reserve System. Between May and June, 1913, Bryan introduced many significant amendments to the Glass Bill, which extended far beyond the conversion of the Board from an organization controlled by bankers to a political organization. The Board was to exercise additional authority in almost every field of operation. Numerous additional changes were made in the course of passage through the House, particularly by the House Committee and the Democratic Caucus. The House made concessions to the bankers, liberalized the definition of eligible paper and reduced the extent of Control. I count eighty-three important changes introduced in the course of passage through the House.

Of 424 provisions in the February draft of the Glass Bill, 177 were substantially retained in the Federal Reserve Act, and 436 new or substituted provisions were introduced and retained in the Act which became law in December.² The Senate introduced 175 significant amendments to the House Bill, of which all but 15 were retained in the Federal Reserve Act. There was scarcely a section which was not radically changed by the Senate. It inserted a provision in Section 4 which conferred upon the reserve banks authority to exercise corporate power and the very important provision for

1. Senate Hearings, Banking and Currency Committee (1913), III, p. 3016; however, see p. 3088. Glass said that the Senate had introduced minor alterations in the text of the House Bill. House Conference Report (House Reports No. 163, IV).

2. Compare Senator Reed's comments on the numerous changes of successive drafts. C. R., LI, pp. 175-78.

the extension of accommodation in a safe and reasonable manner with due regard to the rights of other banks. The Senate deprived the Secretary of the Treasury of authority to supervise the work of the Governor of the Board (Section 10), introduced 20 vital amendments in Section 11 which made the Board more powerful, and radically revised the provisions for open market operations in Section 14. In Section 16, it was responsible for approximately 25 amendments relating to conditions of note issue. The Senate made important contributions to Section 2 (Organization), 3 (Branches), 7 (Earnings), 13 (Eligibility), 16 (Control and Public Deposits), 17 (Clearings), 18 (Retirement of national bank notes), 19 (Reserves), 21 (Examinations), 26 (Gold Reserves), 27 (Emergency Legislation). What important section had not been radically modified?

III. NATURE OF THE SYSTEM

Keynes contends that it was not understood by the framers of the Federal Reserve Act how vitally important to the control of the Central Bank was the London technique which secured that the advances of the Central Bank to the member banks should be normally nil. Full latitude was allowed to the member banks to rediscount, and the reserve banks were to function continuously rather than in emergencies only.³ Keynes' assumption that it was intended or is intended that control occupy the important place in American central banking that it occupies in England, is not justified.

The Owen branch of the Senate Banking and Currency Committee announced as the object of its bill that it was to protect the country's gold, give stability

3. Keynes, II, pp. 235-36.

to commerce and industry, prevent panics, stringency and the pyramiding of reserves.⁴ On the other hand Hitchcock and the Republican members of the Committee contended with equal vigor for reserve banks that would be under compulsion to rediscount for member banks.⁵ The Glass Committee of the House announced as its objectives uniform rates of discount, an elastic currency, economy of reserves, the use of public deposits, the supervision of banking and the creation of a market for commercial bills.⁶ In the House, Glass stated frankly that *the* object of the system was to withdraw reserve funds from congested money centers.⁷ Governor Harding, ten years later, told a Congressional Committee that the fundamental object of the Act was to provide an elastic currency.⁸ Phelan and Bulkley, two invaluable members of the Glass Committee, pointed to the economies involved in putting the resources of the Government and the banks at the disposal of business, as the advantages of the pending legislation.⁹ The Owen faction offered a bribe to potential members: they might borrow from the reserve banks at 4 per cent and lend to customers at 6 to 8 per cent; and Owen anticipated that the reserve banks would offer accommodation at low rates.¹ Many objected to the proposed legislation because it was feared that member banks might borrow at low rates and lend at high rates.² Willis agreed that

4. Senate Report No. 133, II, pp. 7-8.

5. *Ibid.*, III, pp. 112-13. Norris objected to Hitchcock's position on the grounds that discretion was necessary. C. R., LI, pp. 1072-73.

6. House Report No. 69, p. 11. In 1921 Glass objected to uniform rates. The Northwest was thus offered a subsidy. Senate Hearings: Sale of Farm Loan Bonds (1921), p. 30.

7. C. R., L, p. 4648.

8. Senate Hearings: Rural Credits (1922), p. 24.

9. C. R., L, pp. 4676, 4778.

1. Senate Report No. 133, II, pp. 12, 23.

2. C. R., LI, pp. 609-14, 1040-41, 1445.

the reserve banks would supplement the resources of commercial banking.³

The definition of paper eligible for rediscount was broadened in successive drafts. Few considered the question of the adequacy of the supplies of eligible paper.⁴ Untermeyer was of the opinion that supplies of eligible paper would be limited and hence excessive issues of notes would be prevented.⁵ Willis, on the other hand, expressed the opinion that supplies would be adequate for the purpose of obtaining adequate accommodation for the system as a whole.⁶ Sprague saw clearly that it was necessary to confer specific authority on the reserve banks to refuse to discount eligible paper.⁷ Vanderlip suggested that reserve banks should be allowed to refuse accommodation when the object was to extend the business of the member bank.⁸ That the question of the limitations on the privilege of presenting eligible paper for rediscount was clearly presented to the Senate Committee, is evident; that the Senate took no action, altho eligible paper was defined minutely — all this is evidence of the fact that Congress was primarily concerned with providing accommodation rather than with withholding it and controlling expansion.⁹ Eligibility was an important problem not only because the authorities might obtain an additional

3. Senate Hearings (1913), III, p. 3066.

4. The Board said in 1925 that rediscounting had not been restricted by the scarcity of eligible paper as had been anticipated. F. R. A., 1925, pp. 17-18.

5. Senate Hearings (1913), I, pp. 844, 857; II, pp. 1329, 1337-38.

6. Ibid., III, pp. 3036-37.

7. Ibid., I, pp. 365-67, 522-23.

8. Ibid., III, pp. 2065-66. A few members of Congress suggested the possibility of inadequate supplies of eligible paper. C. R., LI, p. 765.

9. Willis has taken the position that the rediscount provisions are to be interpreted to mean that a reserve bank should rediscount for a member bank so long as it can present satisfactory paper. W. H. Steiner, "Paper Eligible for Rediscount at Federal Reserve Banks," *Journal of Political Economy*, 1926, p. 331.

weapon of control if eligible paper were narrowly defined, but also because it was anticipated that the definition would have important effects on banking practice.¹ Moreover, it was important to obtain the best type of paper for collateral against notes. The requirements of eligibility for paper to be used as collateral were not always consistent with the broad definitions requested by vested interests clamoring for more accommodation. In some instances paper eligible for rediscount or purchase has not been made eligible for collateral against notes.²

Federal Reserve authorities have tended to confirm the theory that the reserve banks were institutions of accommodation rather than control.³ In 1919-20, control became a matter of concern, because reserves had declined to a low level. In the post-War years, discretion necessarily played a large part in the administration of the system, because reserves were not an adequate guide.⁴ However, even in 1928-29, when an element of control was introduced even tho reserves were more than adequate, an important consideration was the high rates caused by excessive demands for speculation. In one of its early circulars, the Board announced that the primary purpose of the Act was to provide a banking organization responsive to the ebb and flow of commerce.⁵ The Board interpreted the eligibility provisions broadly;⁶ member banks might borrow at 3 per cent and lend at 6 per cent;⁷ in 1916, Governor Harding re-

1. F. R. A., 1914, p. 172.

2. *Ibid.*, 1916, p. 137.

3. Senator Bristow had pointed out that a Government Board would not favor contraction. Senate Hearings (1913), I, p. 532.

4. F. R. A., 1923, p. 38.

5. Circular No. 7, Series of 1915, F. R. B., 1915, p. 39.

6. Circular No. 13, F. R. A., 1914, p. 183; Circular No. 3, Series of 1915, F. R. B., 1915, pp. 37-38.

7. *Ibid.*, p. 297.

minded members that eligible paper was always acceptable.⁸ The theory that member banks had the right to rediscount eligible paper was so widely held that the Board's Counsel found it necessary to point out that certain restrictions of paper rediscountable were not serious, for member banks do not rediscount all assets.⁹ In the midst of the membership campaign of 1916-17, officials had given support to the theory that members might discount any amount of eligible paper.¹ They were urged to hold as much eligible paper as possible in order to assure themselves of adequate facilities at the reserve banks.²

The officials of the Reserve System began to retrace their steps in 1918.³ The Board complained in December, 1918 that member banks had borrowed in excess of their natural needs;⁴ and in April, 1919, the Board pointed out that member banks should borrow only for designated reasons.⁵ It was necessary for the legal department early in 1920 to point out that altho reserve banks were not commercial institutions, they might legally limit the amount of accommodation.⁶ However, the Board vacillated in the crucial period, 1920-21.⁷ It became expedient once more to emphasize the need of accommodation rather than of restraint. The task of the authorities in the post-War period was to explode

8. *Ibid.*, 1916, p. 587.

9. *Ibid.*, p. 275.

1. *Ibid.*, 1917, pp. 355-72; 1918, pp. 1082-83.

2. *Ibid.*, 1917, pp. 733, 922.

3. Strangely enough, the Board had clearly stated in 1914 that paper offered for rediscount must be acceptable to the reserve bank. *F. R. A.*, 1914, pp. 45-46; also see p. 172.

4. *F. R. B.*, 1918, p. 1169.

5. *Ibid.*, 1919, p. 311.

6. *F. R. B.*, 1920, p. 278: The Board contended that the privilege of incurring liabilities (rediscounts and the like) in excess of capital had been granted for use in emergencies only. However, Glas's explanation in Congress had been that it was necessary to put national and state banks on the same basis. *F. R. B.*, 1920, p. 240; *C. R.*, L, pp. 5047-48.

7. *F. R. B.*, 1920, pp. 240-42, 1124; 1921, p. 775.

the theory that rediscounting was a right of member banks.⁸ By 1929, the Courts declared that reserve banks *may* rediscount.⁹

The Board had failed to control expansion by restricting the definition of eligibility.¹ It pointed out on rather vague grounds that rediscounts were excessive, and the authorities finally made a distinction between eligibility and goodness. Strong says that the test of goodness was first applied in 1919.² Glass had said in 1913 that the magnitude of rediscounts was to be determined exclusively by the regional banks.³ As early as 1916, Governor Harding urged reserve banks not to discount paper not self-liquidating in the highest sense.⁴ In 1917, the Counsel of the Board ruled that the renewal of 15-day notes was a question of policy not law.⁵ Trade Acceptances of an undesirable type might be eligible; but reserve banks might discriminate against them.⁶ From 1918 to 1920, the Board published rulings in which it held that quantity as well as quality may be considered, that eligible bills are not always desirable investments, that the Federal Reserve banks are not legally bound to discount any particular piece of eligible paper.⁷ In 1921,

8. Governor Harding repeatedly pointed out that the banks had no right to rediscount. House Hearings: War Finance Corporation (1921), p. 19; House Hearings: Amendment to Abolish Office of Comptroller of the Currency (1921), p. 4.

9. F. R. A., 1929, p. 228.

1. The Board had expressed doubt on several occasions concerning its capacity to control expansion. The danger was serious, for the reserve banks were the custodians of the country's reserves. F. R. A., 1914, p. 177; 1917, pp. 14-15; 1921, p. 93.

2. Strong, p. 84.

3. C. R., L, p. 4643.

4. F. R. B., 1916, p. 587; also see F. R. A., 1917, p. 19.

5. F. R. B., 1917, p. 765.

6. Ibid., 1918, p. 30.

7. F. R. B., 1918, pp. 527-61, 808; 1919, pp. 255-56; 1920, pp. 386, 580, 699. However, as late as September, 1919, Strauss, a member of the Board, said that a member bank was entitled to reserve bank credit if it presented eligible paper. House Hearings: Amendments to Federal Reserve Act, II (1919), p. 63.

the Board clearly distinguished eligibility (a matter of law) from acceptability (credit standpoint).⁸ Another manner of treating the problem was sometimes suggested: to make definitions of eligibility more elastic. Thus as early as 1916, the Board conferred upon the reserve banks a limited power of discretion in determining eligibility;⁹ and more recently, the Board has frequently refrained from introducing rigid rules of eligibility. The Board has also considered economic conditions in formulating rules of eligibility.¹ At the peak of inflation in 1920, the Board vacillated once more: it was preferable that member banks rather than reserve banks distinguish between essential and non-essential loans.² At a later date a prominent member of the Board stated that Congress ought to define reasonable accommodation.³

From the beginning, the reserve officials took seriously their obligation to accommodate trade and commerce. Emphasis was also placed on the necessity of control and influence; but a peculiar type of control was involved. The reserve banks were not merely emergency institutions; an important responsibility was to keep money rates down. In order to achieve that object, their resources ought to be regularly and constantly employed.⁴ None the less, they recognized their responsibility to their depositors. Strength and safety were even more vital than accommodation,⁵ nor should

8. F. R. B., 1921, p. 545.

9. *Ibid.*, 1916, p. 531.

1. In 1924, the Council requested that the Board interpret obscure phrases in a liberal manner. F. R. A., 1924, pp. 277, 282.

2. F. R. A., 1920, p. 516.

3. House Hearings: Stabilization (1926), II, pp. 855-57. Compare W. P. F. Harding, *The Formative Period of The Federal Reserve System* (1925), p. 175.

4. F. R. A., 1914, pp. 17-18.

5. *Ibid.*, pp. 17-18, 182; 1917, p. 7.

they give accommodation at the expense of liquidity.⁶ The required control of the money market was conditioned on the capacity to renew bills at short intervals or to refuse to renew them.⁷ By 1919, the authorities were not so certain that reserve banks were fundamentally institutions of accommodation. They normally would meet only unexpected demands and seasonal requirements.⁸ But in 1921, it was admitted that the law imposes no limit on the amount that members may borrow;⁹ and in 1923 and 1924, the contributions of the reserve banks as reservoirs of credit and organizations for improving business by offering accommodation at low rates, were once more emphasized.¹ It cannot be denied that the attempt of the System to control the speculative use of bank credit in 1928-29 was largely the result of the accepted obligation to accommodate business. In the early years, the Board interpreted the provisions relating to eligibility rather liberally, a policy consistent with the spirit of the Act, which provided primarily for institutions of accommodation. But by 1918, authorities began to distinguish eligibility from goodness, because reserves were rapidly being depleted. Fortunately Section 4 provided legal support for the new theory that reserve banks might refuse to accept eligible paper.

Strong contends that since the Federal Reserve Act is specific in defining paper eligible for rediscount, its silence on the use of resources obtained from Federal Reserve banks is to be interpreted as a failure to provide

6. *Ibid.*, p. 19.

7. *Ibid.*, 1914, p. 183.

8. *Ibid.*, 1919, p. 36.

9. *Ibid.*, 1921, p. 32.

1. *Ibid.*, 1923, pp. 10, 27. Glass stated in 1922 that reserve banks should discount only in periods of stress. Senate Hearings: Rural Credits (1922), p. 27.

control of the use of resources obtained from reserve banks.² What is the object of defining eligible paper so carefully if member banks can rediscount it and use the proceeds for speculative purposes? Congress apparently was not aware of the difficulty. The spirit of the Act involved a qualitative control of credit, but adequate means for attaining this end had not been adopted.³ At least one expert before the Senate Committee of 1913 pointed out that reserve banks would not be interested in the purpose for which advances were requested.⁴ I have been unable to find any other evidence in the Congressional debates, reports, or hearings, that experts or Congressmen were aware of this problem.⁵ Senator Owen innocently enough introduced an amendment which provided that member banks might extend accommodation to non-member banks, but they were not to be allowed to borrow from reserve banks for the very purpose of extending accommodation to non-member banks.⁶

The system of differential and preferential rediscount rates on different types of paper was introduced in large part because authorities failed to understand that member banks' cash resources were a common fund, and that cash obtained by rediscounting the highest type of paper might be used for speculative purposes. The more recent tendency toward uniformity of rates is in part an acknowledgment of the failure to identify cash obtained from reserve banks in the banks' cash coffers, and

2. Strong, pp. 126, 183.

3. Senate Hearings (1913), I, p. 498; III, p. 1947.

4. *Ibid.*, III, p. 2461.

5. Sprague pointed out in 1914 that the Board ought to introduce regulations to make it reasonably certain that the proceeds of rediscounted paper have been used to finance quick assets. O. M. W. Sprague, "Commercial Paper and the Federal Reserve Banks," *Journal of Political Economy*, 1914, p. 437.

6. C. R., LI, pp. 1145-46.

thus to relate it to the use made of it.⁷ In August, 1915, the Board requested of reserve banks that they refuse advances to member banks which borrowed for the purpose of lending to non-member banks.⁸

By the latter part of 1919, the authorities began to see the problem clearly: "There is no ready method in reserve banking by which the use of reserve facilities can be withheld from use in undesirable lines of activity without also being withheld from use in desirable lines."⁹ A month later the Board pointed out that the use of reserve bank funds is not to be inferred from the type of paper rediscounted; for the latter is determined by the rate structure.¹ In December, it admitted that the prohibition of loans for speculative purposes does not of itself prevent the indirect use of funds obtained from reserve banks for speculative purposes.² In 1921, Harding admitted that a conference had been called late in 1919 to end the evil of borrowing on liberty loans from reserve banks and lending the proceeds on the call money market.³ However, in defending its deflation policy, the Board contended that the crucial test is the type of paper held, not the total of Federal Reserve credit outstanding.⁴ Comptroller Williams, before the Agricultural Commission, suggested that the speculative use of Federal Reserve credit might be controlled by direct methods.⁵ Dr. Miller was later prepared to

7. F. R. B., 1917, p. 425; 1920, p. 2; 1921, p. 25; 1922, p. 679.

8. *Ibid.*, 1915, p. 213.

9. *Ibid.*, 1919, p. 911.

1. *Ibid.*, pp. 1009-10.

2. F. R. B., 1919, p. 1107.

3. House Hearings: Amendment to Abolish Office of Comptroller of Currency (1921), p. 28.

4. F. R. B., 1920, p. 904.

5. Joint Commission Agricultural Inquiry (1921), pp. 69-70, 249-53. Governor Harding said that it had always been difficult to prevent the illegitimate use of cash obtained on eligible paper. House Hearings: War Finance Corporation (1921), p. 6.

assume that member banks were using reserve funds for speculative purposes if security loans and reserve bank credit were increasing.⁶

IV. CONTROL

The framers of the Federal Reserve Act were not primarily concerned with control; and, moreover, member banks were in an independent position in the early years of the development of the System, for they held more than adequate supplies of cash. The instruments of control had been conferred on the Board and the reserve banks in large part because it was deemed necessary to establish a rigid control of note issue; but, as was inevitable, note-control could effect nothing, and the attitude of reserve officials toward the issue of notes has remained a passive one. Eligibility rules on loans and discounts were not an adequate check, and other methods of restraint had not been employed effectively; hence it was necessary to introduce the distinction between goodness and eligibility in order to protect reserves. Historically, central banks introduced measures of control in order to protect reserves; but control today encompasses more than the protection of reserves. The objectives may be to stabilize business conditions; to regulate the flow of credit in correspondence with the requirements of trade, either by increasing or reducing advances or making it more or less profitable for member banks to lend; to prevent unnecessary disturbances resulting from movements of currency or gold; or, finally, to maintain relatively stable monetary rates or reduce them. In recent years Federal Reserve officials have introduced measures of control having much wider scope — measures not intended merely to

6. House Hearings: Stabilization (1926), II, p. 850. However, contrast Strong's evidence. *Ibid.*, I, pp. 340-41; also see Warburg, I, p. 514.

icy, is a relatively new development in central banking. protect reserves or assure the legitimate use of resources obtained from the reserve banks.

Open market operations have come to play a new part. True, authorities underestimate the part that was played by open market operations in the fifty or hundred years preceding the War.⁷ It is true, however, that long range planning of open market operations carried through for the purpose of stimulating business and supplementing or even taking the place of a discount pol-

7. A witness before the French Commission of 1865-67 said that the best method of protecting the country's reserve was by disposing of securities set aside for this purpose. *Enquête. La Circulation Monétaire, 1865-67, V, pp. 302-3.* Courcelle-Seneuil suggested that the Bank of France follow the example of Scotch Banks and sell Treasury bills at the eve of a crisis. Thus, increases in discount rates would be averted. *Ibid., III, pp. 62-63.* However, De Waru, a Regent of the Bank of France, pointed out that a central bank could not dispose of securities in a period of stringency. *Ibid., III, p. 95.* Tooke pointed out that a central bank, unlike a private institution, does not sell securities when specie is withdrawn. Select Committee on Banks of Issue, 1840, Q. 3840. In the early period of central banking, central banks took protective measures similar to those taken by private institutions. Thus, officials of the Bank of England did not hesitate to say that they sold securities to satisfy unusual demands for discounts, or to protect reserves in crises. Bank Charter Inquiry, 1832, Qs. 148-51; Secret Committee of House of Commons on the Commercial Distress, 1848, Qs. 2911-14. Tooke pointed out the necessity of open market operations to offset exports of gold; and Lloyd suggested that securities be sold when gold was exported until the requisite reduction of notes had been made. Banks of Issue, 1840, Qs. 3239-40, 3830. At a relatively early period the Bank of England had developed an advanced technique for averting monetary disturbances caused by payments to and by the Treasury. Banks of Issue, 1840, Q. 3840; Commercial Distress (House of Commons), 1848, Qs. 2939-50, 3500-47. After 1844, the Bank substituted discounts for open market operations which had been its most important business, because it was deemed more profitable to discount than to purchase and sell securities. *Ibid., Q. 2641.*

Belgian authorities considered the proposal that central banks obtain cash by rediscounting; and early in the twentieth century the German Reichsbank began to rediscount Treasury bills to increase its control. The Bank of England's policy of borrowing on consols is well known. More recently, a more advanced policy has been used. Banque National de Belgique: Documents Officiels 1872, II, pp. 54-55; Die Reichsbank, 1901-25, p. 19; London Economist, May 29, 1926, December 3, 1927, June 9, 1928; Keynes, II, pp. 231-32.

Little attention was paid to open market operations in the discussions preceding the passage of the Federal Reserve Act. It was pointed out that they might be carried on with a view to increasing the gold supplies from domestic or foreign sources, and it was apparent to a few that their use might strengthen discount policy.⁸ However, it is clear that even Glass and his co-worker, Phelan, did not understand the problem.⁹ In the early drafts, it was provided that reserve banks might carry on operations unhampered; but when the Federal Reserve Board was converted into an appointed body, representative of the public, it was given the authority to prescribe rules and regulations. At this juncture, the definition of paper eligible for purchase was narrowed, for "other satisfactory paper" was excluded. Willis is in error in putting the responsibility for this action upon Congress;¹ the Bill then had not reached Congress. The Senate improved this section immeasurably.² The House Bill had read, "To invest in United States bonds and bonds issued by any State, County, etc." The Senate substituted, "To buy and sell at home and abroad bonds and notes of the United States, etc.," adding at this point that the purchases were to be made in accordance with rules and regulations prescribed by the Board. The position of a similar clause in the opening paragraph of this section in the House Bill precluded its application to later paragraphs. Hence, it would not have applied to the most important open market operations. The House Bill had made no provisions for the purchase of short term securities. The Senate Bill (and the Act)

8. C. R., LI, p. 283; House Report No. 69, p. 53. Senate Hearings (1913), II, p. 1198; III, p. 3078.

9. C. R., L, p. 4676.

1. Willis, H. P., "The Federal Reserve System. A Retrospect of Eight Years," *Political Science Quarterly*, 1922, p. 574.

2. Warburg made some contributions here. *Op. cit.*, I, pp. 670-71.

gave the Board jurisdiction over purchases and sales of bills and purchases only of securities.

In the early years, the authorities were not sympathetic.³ There seemed to be an opinion current that the money market and industry could obtain resources by rediscounting, whereas open market operations made no contribution to the financing of industry.⁴ When the authority to make purchases was grudgingly conceded in October, 1915, the Board reminded the reserve banks that they were subject to regulation by the Board.⁵ Early in 1916, the Board conceded that operations in the open market might steady discount rates and might contribute to the payment of dividends.⁶ The Board, however, remained lukewarm; and it is significant in the light of the later disputes concerning the division of authority between the banks and the Board, that the latter played a leading rôle in this early period. An amendment of 1916 made discounts and rediscounts and purchases and sales of bills receivable subject to regulations, restrictions and limitations prescribed by the Board.⁷ In 1916-17, the Board pointed out the need of carrying on open market operations according to the changing position and requirements of the Federal Re-

3. F. R. A., 1915, p. 4; F. R. B., 1915, pp. 44, 99-100; 1916, pp. 530, 533. Warburg was in the forefront of the movement to discourage open market operations, in a period in which cash resources were excessive. *Op. cit.*, I, pp. 449-51, 700; *Apps.* 20, 21.

4. F. R. B., 1915, pp. 39-40; 1916, p. 535; F. R. A., 1914, pp. 16, 77.

5. F. R. B., 1915, p. 360; 1916, p. 1. But in its Annual Report for 1915, the Board approved of open market operations to the extent that they were consistent with the requirements of good banking. F. R. A., 1915, p. 5.

6. *Ibid.*, 1916, p. 15. In its Report for 1915, the Board admitted that open market operations would facilitate the maintenance of an effective discount policy and would depress rates in periods when rates were high. F. R. A., 1915, p. 6.

7. F. R. B., 1916, pp. 439-41. The Board apparently was not satisfied that the authority to make rules and regulations was adequate.

serve System as a whole.⁸ Early in 1917, the Board suggested that investments be sold to offset imports of gold, and in a rather hypocritical vein replied to a protest of Congress, that it could not compel reserve banks to undertake open market operations.⁹

What is the significance of open market operations? On the one hand, the position is taken that they are only of limited significance, because the reserve banks are unable to control the total of their earning assets, for sales of public securities are followed by an equal amount of rediscounts.¹ On the other hand, many authorities — Sprague, Hamlin, Miller and Keynes, for example — consider open market operations an important weapon of control.²

The Board itself has not been consistent in its discussions concerning the objective of open market operations. In the early years, it was held that the object might be to bring discount rates down, or control the money market.³ In the post-War period, the Board has suggested that sales of public securities would put upon member banks the responsibility for determining the magnitude of Federal Reserve credit outstanding.⁴ The Board carried this line of thought further in assuming that if the banks borrowed to replenish reserves reduced as a result of sales of securities by reserve banks, re-

8. F. R. B., 1916, p. 587; 1917, p. 336.

9. *Ibid.*, 1917, pp. 76, 154, 457.

1. House Hearings: Stabilization (1928), p. 398; (1926), I, p. 330; W. R. Burgess, *Federal Reserve Banks and Money Market* (1927), p. 211; F. R. B., 1923, pp. 4-5, 542. In 1840, Lloyd said that when the Bank sells securities, the public borrows from the Bank. *Banks of Issue*, 1840, Q. 2733.

2. Keynes, II, pp. 250-59; House Hearings: Stabilization (1928), pp. 145, 399. Sprague says that the System would be an emergency one otherwise.

3. F. R. A., 1914, p. 156.

4. *Ibid.*, 1923, pp. 14-15; F. R. B., 1924, p. 3.

serve credit outstanding was at the proper level.⁵ The Board also contended that the reserve banks obtained control of a larger proportion of reserve bank credit if they purchased securities and the member banks repaid reserve banks with the cash received in payment. Apparently the assumption was that the reserve banks did not control the magnitude of rediscounts. Sales of securities were justified, again, on the grounds that member banks were compelled to rediscount and hence the discount rate became effective.⁶ Frequently open market operations have prepared the way for changes in the discount rate.⁷ One may inquire why public securities should be purchased and rates reduced when the object is to reduce the debts of member banks and thus ease monetary conditions.⁸ Why should not rates be kept up until debts are repaid if a reduction of indebtedness is desired? It has also been held that open market operations are introduced to avert changes in discount rates.⁹ The salient point here is that the fear of the effects of increases in the discount rate has led officials to carry on extensive open market operations.

The use of open market operations by the reserve banks has not been in accord with orthodox lines. In the years when open market operations have been of importance, namely 1915-16 and 1922-30, purchases have been in excess of sales; in this same period, imports of gold have been much in excess of exports; hence, in general, open market operations have tended to strengthen the inflationary effects of gold movements. While the purchases may result merely in a reduction of indebtedness and no net change in the

5. F. R. A., 1924, p. 12.

6. House Hearings: Stabilization (1926), p. 330.

7. Burgess, pp. 209, 225.

8. F. R. A., 1924, p. 12.

9. Ibid., 1923, p. 11.

total of Federal Reserve credit, a reduction of member bank indebtedness tends to stimulate expansion. Of course, the movements over the whole period are of limited significance; it is the shorter swings which are important. In 1924-25 and in 1927-28, gold was exported; but the reserve banks did not purchase securities to offset the loss of gold. (At first securities were purchased in 1927 to offset losses of gold.) In 1924-25 and in 1928, public securities were sold in spite of the loss of gold; and early in 1929, public securities were sold to offset the inflationary effects of imports of gold. Authorities endeavored to compel member banks to borrow with the hope that increased indebtedness would be a check to further expansion.

The profit motive does not in general seem to have been an important consideration in the determination of open market operations.¹ Open market operations conducted for the purpose of introducing monetary ease, or staying recessions, or stimulating borrowing by foreigners, are new phenomena in central banking.²

Officials at first thought that they could control the supply of reserve bank credit outstanding by carrying through a proper policy in the open market;³ but they soon discovered that member banks would replenish their reserves by borrowing, or by depositing gold or notes. On the other hand, authorities were not always able to maintain earning assets at a constant level

1. However, see F. R. A., 1917, pp. 1-2; 1923, pp. 12-13; Senate Hearings: Rural Credits (1922), p. 358. Evidence of Governor Platt.

2. F. R. A., 1924, p. 12; Burgess, pp. 220-22. Keynes contends that America's success in achieving its goal through open market operations is only of limited significance, because the authorities were aided by the increased demand for bank money. Keynes, II, p. 259. But when will any central bank be compelled to face the problem of an influx of gold equal to the net imports of the United States in the years 1921-27?

3. Recommendations of the Federal Advisory Council. F. R. A. 1924, p. 228.

through adjustments in the open market. Thus, the total of earning assets declined appreciably in the first half of 1924 in spite of large purchases of securities.⁴ When reserve ratios were not a satisfactory guide for the determination of monetary policy, officials became interested in the magnitude of earning assets, and the distribution of the total between public securities and other investments. The former constituted that part of reserve bank credit outstanding which had been created through the voluntary action of the reserve banks.

Reserve officials have attempted to exercise control by compelling member banks to borrow from or repay reserve banks. Burgess points out that market rates in a district rise when member banks increase their indebtedness at reserve banks.⁵ Rieffler arrives at a similar conclusion; but he points out that the relation is between member banking borrowing in all districts and market rates.⁶ Reserve officials emphasize the fact that member banks are reluctant to be in debt and hence that any increase in indebtedness results in higher market rates. Hence it is assumed that penalty rates are not necessary in order to discourage borrowing for the purpose of expansion,⁷ and in this way the policy of selling securities in the open market with a view to driving banks to the reserve banks, is justified.⁸ The

4. Stability in the magnitude of earning assets was achieved in 1922 and 1923 but was not maintained in 1924, nor in 1926-29, *F. R. B.*, 1923, pp. 4-5, 542; 1924, pp. 529-30. Tooke was optimistic concerning the possibility of reducing the total of earning assets by sales of investments. *Banks of Issue*, 1840, Q. 3797.

5. Burgess, pp. 183-84.

6. Rieffler, pp. 70-71; also see p. 25.

7. Burgess, pp. 183-84.

8. It is therefore not entirely satisfactory to classify acceptances held by reserve banks with bills rediscounted as against securities purchased in the open market. Member banks can, within limits, obstruct the policies of reserve banks by selling acceptances. They thus avert an increase of indebtedness. Moreover, others may sell acceptances. Acceptances and securities do not represent indebtedness of member banks.

practice is another attempt to relegate the discount rate to an unimportant position. The history of the Federal Reserve System offers ample evidence that appreciable reductions in reserve bank credit over relatively short periods are not possible unless large imports of gold and deposits of currency are made. Hence, neither a vigorous discount policy nor the instrument of control discussed here is likely to have an effect beyond that of preventing further increases of borrowing by member banks. The relationship of debts and rates has not always been consistent with the theory that market rates rise when the indebtedness of member banks increases. Thus, in 1928-29 there were periods when the magnitude of indebtedness was declining, but money rates continued to rise; and the Board admitted that there were exceptions to their theory.⁹

In the early drafts of the Glass Bill, the Central Board was given complete control over discount rates. But when the Board was converted into an organization appointed by the President, its authority was restricted to the review and determination of minimum rates established by the reserve banks. Fear had been expressed that the Board might compel the reserve banks to dissipate their resources by imposing on them a cheap money policy.¹ The theory finally adopted was that reserve banks ought to be allowed to establish their own minimum rates. Neither the ruling of the Attorney-General in 1919 that the Board might initiate changes nor the attitude of the Board in 1927 was consistent with the spirit of this amendment. The Attorney-General erred in basing his opinion in part on the contention that since the Committee had appended "deter-

9. F. R. B., 1928, p. 376; 1929, pp. 359-61.

1. Senate Hearings (1913), III, p. 2669. Also see House Report No. 69, p. 53.

mination" to the "review" in the original Bill, it was clear that "review and determination" were intended to confer a greater power than review. "Determine" was in the Bill as originally presented to Congress.² It was also provided at this early stage that the rates were to be established with a view to accommodating commerce and providing a stable price level. In the course of passage through the House, the stabilization objective was dropped, and it was provided that "rates" instead of "rate" might be established for paper of similar types, and the regional banks might establish rates (not merely minimum rates). The Senate provided for the establishment of rates "from time to time," which amendment constituted a further impairment of the Board's control. The Glass Bill had provided for the submission of rates every week or as much oftener as required. Experts did not agree on the division of authority over rates between the reserve banks and the Board.³

In spite of the fact that the Board's control over discount rates of reserve banks was thus reduced in successive drafts, it assumed control of rate policy in the early years.⁴ And yet the Board has not made the fullest use of the discount rate as a weapon of control. The Board at first attempted to enforce a high discount rate with a view to preserving the resources of the System.⁵ The Federal Advisory Council also suggested that un-

2. Official Opinions of Attorneys General, XXXII, p. 83; Warburg discusses the Chicago Incident. *Op. cit.*, I, p. 492. Compare Joint Commission Agricultural Inquiry (1921), pp. 279, 314; House Hearings: Stabilization (1926), II, p. 648; Harding, pp. 197-98.

3. Compare Glass, Owen, Hitchcock and Shafroth. *C. R.*, I, pp. 4643, 4673, 5996; LI, pp. 666, 700, 859, 6024-27; House Report No. 69, p. 53.

4. *F. R. B.*, 1915, p. 13; 1917, pp. 922-23; 1920, p. 557.

5. *F. R. A.*, 1914, pp. 7, 10, 172. At this early date, the Board suggested the use of the discount rate for the purpose of preventing undesirable uses of reserve bank credit.

due expansion of a more or less permanent nature and dissipation of reserves should be prevented by increasing rates.⁶ But the assumption of control of reserve rates has resulted in a failure to make adequate use of discount policy.

The Board faced its first serious test of control in 1918-20. Then it introduced higher rates tardily and in an uncertain manner. It prefixed announcements of changes with remarks on the futility of the impending step;⁷ the Board did not anticipate "a close connection of Bank rate with volume of credit," nor could "the reserve banks control this condition of affairs merely through changes of discount rates."⁸ On the other hand, failure to use this instrument was followed by an assertion of effectiveness if it had been used.⁹ Appeals to member banks were apparently a more popular form of control.¹ In announcing that Federal Reserve rates reflect market conditions, the Board implied its inability to control.² By 1919-20, the authorities had assumed an attitude toward the use of rate policy that presaged much for the future. The explanation of the ineffective policy, it may be remarked, is not adequately explained by the needs of the Treasury.³

The Federal Reserve Board has contended that, contrary to current opinion, the relation of the Bank and market rates is similar in Great Britain and the United States. The Bank rate is above the market rate on bankers acceptances in both countries. It is true that rates on customer loans and commercial loans in the open market are generally above the Bank rate in

6. *Ibid.*, 1918, pp. 843, 852.

7. F. R. B., 1918, p. 487; 1919, pp. 105, 910.

8. F. R. B., 1919, pp. 911, 1010.

9. *Ibid.*, p. 524.

1. Harding, p. 171.

2. F. R. B., 1921, pp. 6, 671-73.

3. *Ibid.*, 1919, pp. 105, 910.

the United States; but in Great Britain, commercial paper is not created in the course of financing transactions of the same kind as in the United States, and hence the problem of rediscounting does not arise. Keynes' view is that the important point is that reserve banks are prepared to purchase acceptances at or below the market price, whereas the British rate is above the market rate on acceptances. He is correct in contending that reserve banks are normally prepared to lend to member banks at profitable rates, whereas the Bank of England lends only in emergencies. But he is in error to put the emphasis on the buying rate.⁴

The reserve banks are not always prepared to purchase bills at or below the market price. The steps may be that the reserve banks will increase their rates and hence market rates will rise. Published rates have been minimum rates; and the actual rates have been as much as $1\frac{1}{2}$ per cent above the minimum rates.⁵ The buying rate is merely an alternative method of raising money, and member banks find it normally a more attractive method of raising cash than rediscounting. They can usually obtain cash more cheaply by selling acceptances than by rediscounting; but when they sell large quantities of acceptances to the reserve banks, the latter increase their buying rates and purchases are reduced.⁶ Moreover, by 1920, the reserve banks had shifted the responsibility for supporting the acceptance market in part upon the member banks.⁷ The Federal Advisory Council has pointed out that the buying rate should be adjusted to the rediscount rate.⁸ The buying rate, ad-

4. Keynes, II, pp. 235-38.

5. F. R. A., 1922, p. 18.

6. Thus, see *Ibid.*, p. 4; 1925, p. 3.

7. *Ibid.*, 1920, p. 51.

8. *Ibid.*, 1928, p. 230.

justed more rapidly to market conditions, declines more than the rediscount rate in periods of monetary ease; and gradually rises to the level of the rediscount rate, or even above, in periods of increasing activity.⁹ In general it is true that the reserve bank buying rate determines the rate on acceptances; but it has been true that excessive supplies of money have on occasions been diverted to the acceptance market, with the result that the reserve banks have reduced the buying rate to a low level in order to remain in the market. On other occasions, the market has been annoyed at the attempts of the reserve banks to increase purchases and thus depress the rate.¹ Moreover, the availability of the reserve banks' resources through their purchase of acceptances is not of fundamental significance for purposes of control because the sale of acceptance is largely seasonal; the object being in the main to obtain accommodation for the purpose of obtaining currency notes.²

To sum up. The essence of Keynes' view is that the reserve banks' buying rate on acceptances is at or above the market rate, and hence it is always possible to borrow from the reserve bank at a profit or without loss; control therefore is jeopardized in the United States. The position presented here is that reserve banks are not always prepared to buy bills at or below the market rate, or at least that the reserve banks sometimes raise the buying rate to a level where it becomes unprofitable for the member banks and others to sell their bills. The reserve banks occupy such an important position in the

9. House Hearings: Stabilization (1926), I, p. 440; F. R. A., 1927, p. 91. Thus in 1918 and 1919 and part of 1929 the discount rate was below the buying rate, and in 1921 and the early part of 1922, there was little difference. But in 1922 and 1924 the buying rate was appreciably below the discount rate.

1. F. R. A., 1918, pp. 19, 801-2; 1919, p. 23; 1920, p. 600. Compare Rieffler's very able discussion. *Op. cit.*, pp. 22-23.

2. F. R. B., 1929, p. 594.

acceptance market that their higher buying rate will immediately become the market rate; but the point that Keynes neglects is that it may be unprofitable to sell bills to the reserve banks even tho the market rate immediately rises to the level of the buying rate. Holders are unwilling to accept a loss. Moreover, there is no warrant for the emphasis thus placed on the buying rate. The important point is that it is normally profitable to rediscount with the reserve banks, and the sale of acceptances to the reserve banks is merely a more attractive method of raising cash, for which rediscounting would be substituted if it were no longer possible to sell bills. When the authorities have attempted to enforce a penalty rate, they have frequently found it necessary to make their acceptance policy consistent with their rediscount policy.

Rediscount rates above customer rates are not as a rule practicable; but rates in excess of returns on open market investments — acceptances, Treasury bills, commercial paper — are possible. Member banks may then find it profitable to sell an investment and repay the reserve banks. Such a policy, however, will not be effective so long as the return on investments in any important open market is in excess of the rediscount rate. The apparent effectiveness of the discount policy in 1928-29 is to be explained by the combination of high rates with pressure on borrowers. The return on security advances was so high that the enforcement of a penalty rate proved impossible. The policy was only in part successful. Member banks were able to dispose of investments other than security loans, and altho continuous borrowers did repay the reserve banks, other banks, not in their vulnerable position, borrowed. They could not be pressed to repay. They were attracted by the increased returns to be obtained on the security

market as a result of the very fact of desertion by the continuous borrowers. The value of the penalty rate — even in relation to the rates in open markets — is also limited because member banks are influenced in the distribution of their investments by considerations of liquidity, and hence may be unwilling to give up any large quantities of short term investments. Further, the forced sale of these investments may result in a capital depreciation which may ultimately more than offset any difference between the nominal return and the rediscount rate; it may be profitable to hold the investment.³

In 1919–20, the reserve banks pursued a rather ineffective discount policy.⁴ Altho officials proclaimed that the reserve rate should normally be above the market rate, they were satisfied that under the abnormal conditions of the early post-War period, a normal discount policy was impossible of fulfillment.⁵ The promise of a discount policy along well-known English lines was definitely repudiated by 1922.⁶ Thus it was said that it was not practicable to introduce discount rates in excess of the 10–12 per cent frequently charged to customers on eligible paper.⁷ The Board consoled itself with the thought that the reserve banks fortunately did not have to rely on discount policies exclusively. However, on one occasion, it was pointed out that since

3. Governor Strong has argued that a rate to be effective need merely be above the average obtained on all investments. *Op. cit.*, p. 195. Dr. Miller says that the penalty rate was successfully enforced in 1923 when the rediscount rate was in excess of the return received in the open market. *House Hearings: Stabilization (1926)*, II, p. 709.

4. *F. R. A.*, 1919, p. 4; *F. R. B.*, 1919, p. 1017.

5. *F. R. A.*, 1919, p. 2; *F. R. B.*, 1921, p. 685.

6. In 1921, it was pointed out that the margins between reserve rates and customer rates vary. *F. R. A.*, 1921, p. 30; also *F. R. A.*, 1922, p. 411. A mechanical rule, namely, that reserve rates be above market rates was held to be an inadequate guide for a country in which rates vary so much. *F. R. A.*, 1923, pp. 3, 7–9.

7. *Ibid.*, 1922, p. 15.

members could lend at 8 per cent, it was not judicious to allow them to borrow at 4 per cent.⁸ In 1925, a vigorous discount policy might appropriately have been introduced; but the reserve banks raised rates outside of New York only; an increase in New York might have important effects, because in New York there were large open markets and important relations with other markets.⁹ In 1928-29, the Board again refused to depend on the use of the discount rate to any important extent.¹

In recent years, the tendency has been to use direct methods for controlling the use of reserve bank funds. By 1925, the tendency was to give up the theory that reserve banks were fundamentally banks of accommodation. They are to meet temporary and seasonal needs, and members now accept the position that it is not proper to borrow to enlarge operations.² The theory that reserve banks rediscount at their option rather than under compulsion has generally been accepted since 1919-20. But apparently "this exercise of discretion" has not been an adequate instrument of restraint. The amount of eligible paper, including member banks' notes that might be secured by Treasury obligations is much in excess of the maximum discounts of 1920.³ In part, the difficulty has been the old one that it is impossible to determine what the member bank does with

8. *Ibid.*, 1921, p. 32.

9. It was pointed out that open markets in New York were large enough to assure some importance for reserve bank rates. *F. R. A.*, 1925, pp. 15, 17.

1. *Ibid.*, p. 6; 1928, p. 9; 1929, p. 2. Sprague conceded that the increase in security loans might be checked by an increase in the discount rate; but he concluded that a higher rate would not be consistent with the requirement to accommodate commerce. *House Hearings: Stabilization* (1928), p. 148.

2. *F. R. A.*, 1925, p. 16.

3. *Ibid.*, 1926, pp. 9-10.

cash obtained from the reserve banks.⁴ The authorities have been more vexed by the problem of the use made of reserve bank funds than by the magnitude of reserve bank credit outstanding. It is easier to make the test the magnitude and permanence of advances to member banks than to apply the rather vague test of goodness.⁵ In central banking, criteria must be simple and easily understandable. It is true that experience with the use of progressive rates has enlightened officials concerning the possibility of using a measure or standard based on the amount of accommodation to member banks. Officials have brought pressure to bear on continuous borrowers on the grounds that (1) reserve banks ought not to provide capital to member banks; (2) continuous borrowing is unfair to other member banks; (3) continuous borrowing is harmful to the borrowing banks, because resources will not be available when they are needed; and (4) it is unfair to the depositors of member banks, because a bank should not be heavily indebted.⁶ Yet reserve officials apparently were but moderately successful in reducing the extent of continuous borrow-

4. In 1923, the Board pointed out that there were no automatic devices for discovering whether the use made of reserve bank credit was productive. The problem was an administrative one. *F. R. A.*, 1923, p. 35. The Federal Advisory Council agreed. *Ibid.*, 1925, p. 288.

5. In 1923, the Board declared that qualitative tests were adequate. (*F. R. A.*, 1923, p. 33.) In 1925, the Board stated that technical eligibility and soundness from the credit viewpoint were not adequate tests, and that the position and character of management of the borrowing bank were also considered. The latter two tests represented advances over the criteria used in 1918-20. The Board defended its position on the grounds that it was not possible otherwise to discover the use made of reserve bank funds. (*F. R. A.*, 1925, pp. 17-18.) In 1926, the Board modified its position. In addition to technical eligibility and intrinsic soundness, it was necessary to consider the rights of other member banks. Continuous borrowing by member banks was a disturbing problem. (*F. R. A.*, 1926, p. 4.) Governor Strong said that continuous borrowers were requested to repay if they had large loans to brokers outstanding. *House Hearings: Stabilization* (1926), I, p. 456.

6. *F. R. A.*, 1925, pp. 5, 16; *Ibid.*, 1926, p. 3.

ing.⁷ The campaign to reduce it was aimed at those who lent on the stock market as well as those who merely obtained capital from the reserve banks. The problem — both crucial and difficult — is not solved by this process if the identities of the borrowers change incessantly. That very problem has confronted officials in the last few years.

Faced with the problem of increased use of credit for speculative purposes, the authorities concocted new theories and interpretations. They were aware of the difficulty of identifying use of reserve bank money; and they made less frequent use of the distinction between eligibility and goodness. However, they were inclined to take the position that concomitant increases of reserve bank money and security loans were evidence of the seepage of reserve bank money into speculative channels.⁸ Hence, member banks that were borrowing from reserve banks and also had large security loans outstanding, were requested to dispose of part of their investments and repay the reserve banks.⁹ This policy also on the whole was ineffective.¹ The Board distin-

7. Compare the vigor of their statements. *F. R. A.*, 1925, p. 16; *Ibid.*, 1926, p. 3; *Ibid.*, 1928, p. 8.

8. The evolution of the attitude of the authorities on this vexatious question is significant. In the early post-War period, it was one of despair. By 1923-25, the possibility of coping with the problem through the use of administrative measures was suggested. By 1928, the Board justified its control of the use of all member bank resources in part on the grounds that funds obtained from the Federal Reserve banks cannot be earmarked. (*F. R. A.*, 1923, p. 35; 1925, pp. 16-18, 288; 1928, p. 8.) Thus, altho the Board had at one time admitted its inability to cope with the problem of the use of reserve bank credit, it now relied on the same argument — it is impossible to identify the use made of its credit — to justify its control of the use of all member bank credit.

9. *F. R. B.*, 1929, pp. 526-27.

1. The pressure of the increased indebtedness and higher rates that followed exports of gold and sales of securities was effective only temporarily. Thus the total of member bank credit over the year 1928-29 (February to February) was relatively stable. (*F. R. B.*, 1929, p. 361.) In particular, the reduction of the total outstanding in the third quarter

guished between banking and credit policy, and admitted that if one bank sold an investment and repaid an advance from the reserve bank, another bank was driven to the reserve bank. The justification of the policy was held to be that the member bank was placed in a stronger position, and that a more general method — the use of open market or discount powers — might have far-reaching effects.²

The Reserve Board's defense of its attempt to control the use of member banks' resources for speculative purposes was not impregnable. It reverted to a position taken in 1916 that undue use of credit for undesirable purposes would increase the cost of credit for legitimate purposes. The amount of accommodation at the disposal of the System was said to be adequate if economical use were made of it.³ The Board was not always clear whether it was attempting to control the use of all member bank resources, or merely the resources of member banks indebted to the reserve bank, or that part of the accommodation of the latter which was created on the basis of reserve bank credit.⁴ The of 1928 was an achievement. But the increase in June and July, 1929, spelled disaster for the reserve policy. Moreover, member banks disposed of investments in exchange for time deposits and hence were in a position to increase other operations. The reduction of the total member bank credit outstanding may be considered as inflationary, because the banks were thus enabled to satisfy speculative demands as more cash was made available for other purposes. Member banks were prepared to borrow at reserve banks for the purpose of carrying security loans; but it was not profitable to borrow for the purpose of carrying acceptances and other open market investments. *F. R. B.*, 1929, p. 527.

2. *F. R. A.*, 1928, p. 9. The Board admitted failure: Increased indebtedness and higher rates were not effective in reducing member bank balances because deposits could not be reduced adequately to make an appreciable reduction of balances possible.

3. *F. R. A.*, 1916, p. 5.

4. In 1918-20, direct pressure had been used to control the use of member bank resources. (*F. R. A.*, 1920, p. 603.) But in 1921, the Board announced that reserve banks had no control over the loan policies of member banks. (*F. R. A.*, 1921, p. 95.) In February, 1929,

authorities contended that a continued increase in the speculative use of bank credit would result in a deficiency for other purposes, and a deficiency in the total, and hence, increased borrowing at the reserve banks. Moreover, the Board held that all the credit advanced by member banks was dependent on reserve bank credit; hence the Board justified the attempt of the reserve banks to control the use of the resources of member banks. The Board's position is not tenable. It has already been pointed out that member banks in fact had built up their balances in large part by depositing cash, and also that fluctuations in reserve bank balances and accommodation by reserve banks were closely related to currency and gold movements rather than to requirements for increased balances.⁵ Moreover the

it referred to the credit facilities of the System altho it admitted that interference was contingent on the use of Federal Reserve resources. But in March, it took the position that Federal Reserve credit was the basis of all accommodation and since the reserve banks could control the magnitude of their assets they were responsible for the magnitude and use of member bank credit. (F. R. B., 1929, pp. 94-95, 176.) In earlier years, the Board had admitted that the reserve banks could not control the magnitude of their earning assets. The Board was not justified in its statement that the policy of direct pressure had been successful. (F. R. A., 1929, p. 4.) Ex-Governor Young frankly told the Brookhart Committee that a refusal to give credit to banks advancing money on the stock market had not solved the problem of the use of bank credit for speculative purposes. (Senate Hearings: Nomination of Eugene Meyer, Jr., 1931, pp. 71-72.)

5. From 1922 to 1929, the large movements in the total of reserve bank credit outstanding are to be explained by gold movements, and to some extent, movements of other forms of currency. There are two important exceptions. In one period in 1924-25 and in another in 1927-28, gold was exported (net) and member bank balances increased. Reserve banks were in a relatively strong position. Imports of gold were used for the most part to reduce debts at the reserve bank, and from 1915 to 1917 and since 1922, also, to withdraw currency and increase balances at the reserve bank. (F. R. B., 1927, pp. 632-33.) Demands for reserve bank credit are to be associated with fluctuations in demands for currency and gold movements, rather than with demands for increased balances. The close similarity of movement of currency and Federal Reserve credit is significant. (F. R. A., 1923, p. 24; F. R. B., 1926, p. 469; 1927, pp. 632-33; 1928, p. 374; 1929, p. 594.)

Board previously had taken the position that it could exercise control only if the banks requested accommodation.⁶

V. CONCLUSION

The present status of control is no more certain than it was fifteen years ago; a conclusion which will be made more clear by summarizing what has been brought out in the preceding pages.

In the earliest years, the reserve banks did not contribute large resources to the money market, and control played an unimportant part. But in 1918-20 they were confronted with the problem of protecting reserves; and since eligible paper had been defined broadly and discount rates had been maintained at a low level, they were compelled to refuse to rediscount eligible paper. They then relied on a vague distinction between eligible and good (acceptable) paper. A policy of discrimination is dangerous for central banks. Even if it is admitted that penalty rates are not practicable in the United States and that the responsibility of establishing rates with a view to accommodating commerce limits the rôle to be played by discount rates, we cannot avoid the conclusion that adequate use has not been made of the discount rate as a weapon of control. Ingenious substitutes — a termination of discriminatory rates in 1919-20 (equivalent to an increase in rates), increased rates for advances in excess of a basic line, direct pressure on member banks, elasticity in the definition of eligibility — have all been tried, with no assured results.

After 1920, the distinction between goodness and eligibility played a less important rôle than in the years

6. F. R. A., 1914, pp. 17-18; 1918, p. 790; 1920; pp. 11-12; F. R. B., 1923, p. 284.

1918-20. Apparently the lesson had been learned that indiscriminate treatment was not possible if officials depended almost exclusively on definitions of elasticity and on administrative discretion in the selection of good paper. But when the promise of a more orthodox use of rate policy failed of realization, new devices were employed. Even the success of open market operations is to be traced to a fear of the effects of changes in discount rates. The pressure on continuous borrowers was an attempt to preserve the resources of the reserve banks for periods of need, and an admission that the measuring-rod of excessive use of resources of reserve banks which had been applied in 1920-21 under the Phelan Act (Progressive rates), had not been satisfactory. Probably the emphasis on continuous borrowing was consistent with the position now taken that cash obtained by rediscounting even the highest type of paper might conceivably be used to further speculation. In this view, any attempt to control by relying on tests of goodness was absurd on the face of it, because member banks might make any conceivable use of the proceeds of rediscounts of eligible and good paper. The attempt to reduce continuous borrowing was in part a concealed attempt to solve the qualitative problem. When the problem of excessive use of bank credit for speculative purposes became serious, the authorities made use not only of this test of permanency of borrowing, but of their legal rights to examine member banks. Unable to identify the use made of reserve bank resources, the officials now took an attitude not at all in accord with the old traditions of reserve banking. They curtailed accommodation to banks that were lending excessively on the stock market. They assumed that since it was not possible to determine the use made of reserve bank funds and that since reserve banks con-

trolled the magnitude of earning assets and, hence, that all member bank credit outstanding depended ultimately on reserve bank credit, they were responsible for the use made of member bank resources.

It was thus not intended at the outset that the reserve banks be primarily banks of control; but strangely enough the responsibility to function as banks of accommodation has resulted in increasing emphasis on control. The discount rate, however, is not an adequate tool for the purpose of assuring the legitimate use of the large resources put at the disposal of banks by the reserve banks. The coöperative nature of the Federal Reserve System; the rights of one bank against another; the personal relations between reserve banks and member banks, contrasting strongly with the situation in Europe, where the orthodox central bank is merely interested in the bill that is offered for rediscount; the restrictions and responsibilities imposed by the requirements of eligibility — all conspire to make the discount rate a relatively unimportant factor in central banking policy in the United States. Discount policy cannot solve our problems. It cannot yet be said what additional instruments of control will prove adequate; but control is called for, of a kind and degree still uncertain.

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INTERNATIONAL AND DOMESTIC COMMODITIES AND THE THEORY OF PRICES

SUMMARY

The assumption of independent national price systems, in theory and in treatment of current problems, 409.— I. No domestic and no international prices; only local prices, more or less sensitive to external conditions, 410; merchandise and services, wholesale and retail prices, not differentiated in the terms "international" and "domestic" commodities, 413.— II. Parallelism in movement of wholesale price indices, 413; Internationalization of the commodity price structure, 414.— III. Illusion of domestic price structure for wholesale merchandise: large or sustained movement not essential to price interdependence, 422; defective market data and apparent price deviations, 432; limitations upon actual deviation; a priori indications of high correlation, 433.— IV. Reformulation: the local category consists mainly of services and retail prices, 436; merchandise at wholesale is international, 437; regional prices structurally related, 442.— V. Practical applications: farm relief, 452; export combinations, 453; tariff and monetary problems, 455.— VI. Regional prices of international goods: as affected by foreign exchange, 456; by movement of specie or changes in purchasing power, 457; a possible reconciliation with orthodox theory, 458; price stabilization through credit policies of central banks, 459.

CENTRAL portions of international trade and monetary theory rest upon the premise of distinct national price structures — price levels, largely determined by domestic conditions, that are individually and divergently moved by the flow of specie, credit inflation or contraction, and by fluctuations in foreign exchange. Tho the superstructure of theory has been refined and reshaped, the exposition of the underlying premise itself is vague in outline and somewhat inaccurate in detail. Indeed, a reëxamination of this premise raises troublesome questions respecting the theoretical superstructure. If this be the status of technical literature, it is not surprising that the widest confusion should prevail in popular interpretation. Erroneous notions respecting

the interaction of domestic and foreign markets are implicit in enacted legislation of serious consequence, such as the Webb-Pomerene and Federal Farm Board Acts, as well as in proposed legislation of the type of the farm relief bills. They are expressed, also, in technical and popular treatment of trade and tariff problems. In view of the gravity of the related economic and political issues, the emendation of significant applications or of details of theory seems to be well worth the while.

Accordingly, the first three sections of the present discussion treat successively of the concepts of international and domestic commodities, and of the factors which make for uniformity and divergence in the movement of regional prices. The fourth section attempts a reformulation of the received notions, after a prior classification and analysis of what are broadly termed commodities and prices. The concluding two sections deal briefly with practical and theoretical applications.

I

It is mainly through the mechanism of foreign trade that economic conditions abroad impinge upon the domestic economy. The accepted doctrine respecting the existence of independent national price levels rests explicitly upon the notion that a minor portion of the national commodities falls within the sphere of foreign trade. The great bulk of the national goods is exempt from the price-leveling influence of this trade; the gold prices of such goods are determined primarily by domestic conditions; the action of markets abroad is mediated through the important but relatively small class of merchandise that enters into world commerce. With commodities largely sheltered from the repercussion of foreign markets, the immobility of labor permits different levels of effectiveness of labor and different price levels of commodities.

What is the basis of this distinction between "international" and "domestic" commodities — the goods sensitive and relatively insensitive to foreign markets? This is a part of the organon of international trade that seems to be firmly grounded upon observed fact; it has a direct and obvious bearing upon a number of the grave politico-economic issues of the day. Cairnes seems to have made the first clear distinction between the two classes of goods. One class comprises the great staples of commerce, such as corn, flour, tea, sugar, metals, most raw materials of industry. "In the exchange for commodities of this description, the value of gold, tho not the same all the world over, does not greatly vary within the range of general commerce," save for costs of carriage and the operation of local fiscal laws. The second class of goods consists of those which "through unsuitableness for distant traffic, or owing to some other obstacle, do not enter into international trade," and there is nothing to prevent the widest divergence in their gold prices, as between different countries and even localities within the same country. Manifestly the distinction between the two classes of goods rests proximately upon a difference in mobility, ultimately upon the degree of sensitiveness to external price influences.

For the self-sufficient national and even regional economies of the period, antedating the commercial development of modern transportation and communication, this rough outline serves fairly well. It is barely more than a rudimentary statement of the situation today. Later writers have somewhat refined and amplified the concept, with little substantive change.¹

1. For representative statements of the current view, see J. E. Cairnes, *Leading Principles of Political Economy*, p. 409; F. W. Taussig, *Free Trade, The Tariff, and Reciprocity*, pp. 71, 73-74; J. Viner, *Canada's Balance of International Indebtedness*, pp. 209-10; J. W. Angell, *The Theory of International Prices*, pp. 376, 377-78.

To the two categories of commodities have come to be applied the prescriptive designations "international" and "domestic." Yet if the concept has any application today, it differentiates commodities which are characteristically *local* — not domestic — in respect of price levels and trade, from those which are international. The domestic commodities do in fact enter into foreign trade, the volume of it depending upon tariff barriers, prices, geographical location, and density of population near the frontiers. To be sure, the accepted term is suggested by the partially developed concept of Cairnes — "commodities . . . which do not enter into international trade" — a phraseology followed by later writers. Tariffs aside, prices in contiguous sections of the United States and Canada are more nearly uniform than in, say, Buffalo, New Orleans, and Seattle. Goods that are domestic in the Middle and the Far Western states may enter into a substantial foreign trade in central Europe, *e.g.*, in Belgium and Austria.

To repeat, in no sense are prices domestic. Nor is there an international price. In actuality we find only local prices, more or less responsive to quotations elsewhere. Yet commodities vary in sensitiveness to external influences; a difference here, tho it be merely one of degree, does exist. Hence we may speak of "international" and "local" commodities, even tho prices are expressed in local terms only.²

In itself this matter of nomenclature is of no great consequence. As will later be seen, however, the confusion in terms is paralleled by confusion in interpretation. In a country of the great expanse of the United States, for generations sheltered by high tariff barriers, her interior markets remote from the great trading

2. Except in the relatively few instances where manufacturers attempt to maintain a single national price.

nations, it has contributed to the excessive emphasis upon domestic price influences. Erroneous notions respecting the interaction of prices in domestic and foreign markets, quite prevalent in the controversial economic issues, are not uncommon in technical literature.

Be all this as it may, the central fact in the distinction between local and international goods seems outwardly to be clear and simple. It is in accord with commonly observed fact. Let us accept it provisionally, merely noting in passing three characteristics of the usual exposition. First, the domestic category is regarded as being by far the more important of the two. Second, expressly or by implication, an international commodity is denoted by a substantial or regular volume of imports or exports; when the foreign trade dwindles to insignificant proportions, the product passes back to a domestic basis. Lastly, the terms "commodities" and "prices" are employed in a sense so inclusive as to obscure the character of the adjustments. So far as concerns price behavior, there is little differentiation between labor and services of various sorts, on the one hand, and articles or merchandise on the other. Nor is any distinction made between wholesale and retail prices. In actuality a commodity may be international in its wholesale, and local in its retail stage. Before attempting a reformulation, however, it seems desirable to consider some of the forces which bring primary or *wholesale* prices into organic relationship.

II

In view of the tenet of largely independent domestic prices, the movement of the national price levels shows a surprising degree of parallelism. The fact of this correlation, as measured by the trend of the national price indices, is familiar enough; and it appears more strik-

ingly in the data for recent years. This is a parallelism in movement only; unfortunately the available data are too few and unreliable to permit generalizations respecting absolute levels. The similarity in the broad movements of the national prices is especially noteworthy when account is taken of the varying level of and great changes in tariffs, as well as of economic movements more or less peculiar to particular countries; and when account is taken, also, of the differences in the make-up of the indices as to statistical method, the great variation in the number of included commodities, and the proportion of raw materials, foodstuffs, and manufactured goods.

The connecting link between the national price structures, it has been suggested, is the mechanism for the adjustment of the international balances. The direct impact of foreign prices is confined to a limited range of commodities. Some condition is therefore operating on the national markets, bringing the general price level into fairly quick accord with that of other nations. This condition is said to be the process envisaged in the classical theory — the movement of specie and the variations in rates of foreign exchange.³ However, the correlation in the national prices can scarcely be considered an objective verification of this theory. The weak point is the initial premise of a limited range of international commodities. The stated processes may, indeed, contribute; but, as will shortly be seen, there is a very simple explanation.

It is, however, to the disproportionate number of international raw materials in most of these indices that the correlation in prices is usually ascribed. In a measure this is true; but the real cause is more deep-seated. In the first place, no small part of this price interde-

3. See, for example, Angell, *op. cit.*, pp. 392-93.

pendence is the result of a striking expansion in the scope of international goods. The progress of trade and industry has shifted innumerable commodities from the local to the international category. In respect to material and portable goods the international is now much the more important of the two. Second, fluctuations in the price of the international goods bring about parallel changes in costs as well as in retail prices. Raw materials — mainly international goods — easily constitute the largest item of cost in manufactures as a whole. In the United States, such materials represent about half the reported total "value of product." In Europe, the percentage is doubtless higher. Consequently, changes in prices of this predominant class of international goods — manufactures, minerals, agricultural products, and many products of the fisheries—give direction to movements in the general level of national prices. Other factors of cost, both in wholesale and retail prices, are much less variable.

Associated with this general interdependence of prices is a well-defined sectional or geographic conformation that is particularly apparent in the prices of international raw materials. The main lines of price and commerce radiate from the densely populated industrial region of the North Atlantic; that is to say, from industrial northern Europe and the industrial East of the United States, nearer to northern Europe in respect of costs of carriage than to the western half of the country. Raw materials and foodstuffs flow to this central zone, with wholesale prices graduating upward from the more distant surplus-producing regions — those with the highest costs of transportation. A counter current of manufactured goods moves from this center, prices increasing with distance and costs of transport. The general picture is one of a graduated range or scale of whole-

sale prices, advancing toward the industrial center of the periphery in the case of extractive materials, and rising away from the center in the case of manufactured goods.

This is, of course, only a broad characterization of the geographic trend of prices. The numerous restraints upon trade — customs laws, sanitary regulations, quarantines — make for a varying measure of sectional price irregularity. Changes of a slower and more enduring sort are caused by local expansion of the various industries, with corresponding alterations in the direction of exports and imports. Under western exploitation the cultures indigenous to particular areas have become widely diffused, with a parallel development of the mineral and timber resources. In the industrially less advanced regions the development of the extractive industries has been followed by that of manufactured products, partially sheltered by advancing tariffs from the influence of prices abroad. True, the volume and variety of the international exchanges tend on the whole to increase. But so far as there exists conscious economic and political direction it is commonly informed by the concept of economic and price independence. To the limited extent that such policies are effective they make for sectional price irregularity.

For the present purpose, little more than a mere enumeration of the correlating influences will be sufficient. They are familiar to the point of being commonplace; yet their import is largely ignored in those sections of economic theory which treat of the degree and conditions of regional price interdependence. With the modern trading mechanism, uniformity in wholesale prices is not contingent upon the actual or sustained movement of commodities. In the staples of world commerce a relatively small number of international commodity ex-

changes dominate the world markets by means of their spot and futures quotations, as well as by the operations in arbitrage, which are, of course, cable and telegraphic operations. These exchanges, and the international auctions, such as those at London for wool and at Amsterdam for tobacco, are closely followed by every substantial trader or manufacturing consumer concerned with the particular commodities.

Nor is the situation much different in less important raw materials, or in manufactured products. The great foreign trade houses maintain extensive organizations which reach to the remote corners of the globe. Their activities are supplemented by those of many small or independent traders, and by the concerns which specialize in particular commodities or groups of commodities — *e.g.*, textiles, wool, grain, food specialties, copper — and in the trade of particular regions, the Oriental-American trade, for example. Traders such as these have been pioneers in introducing and pushing local specialties into foreign markets. Moreover, the domestic is geared to the foreign trade. Brokers, commission houses, and dealers in specific commodities often do both a domestic and a foreign business; and many of the larger manufacturing concerns maintain foreign organizations for the purchase of materials and the sale of finished products. Cartels, foreign trade associations,⁴ coöperative marketing and buying organizations, department and chain store buyers are also important factors. Even the foreign representatives of the various governments, as well as the financial institutions, correspondents, shipping lines, etc., are alert to advance the interests of their nationals or principals by seeking trade opportunities, cargoes, and markets for products and services.

4. See also pp. 683-684.

So numerous and alert are all these interests, and so keen the competition, that wholesale prices in any one region cannot long remain "out of line," except in regions not served by modern means of transport and communication. Outstanding among the factors which make for price uniformity are the complementary services — the cable, telegraph, and wireless, and the numerous services which swiftly and widely disseminate information regarding supplies, prices, and the state of the markets. In such a situation the flow of cabled bids and offers alone tends to restrict price differentials to the costs of carriage and handling. Of course this price-sensitive mechanism rests upon the developments in the field of transportation: the material reduction in the cost and duration of transport and incidental services, the lessening of risks, the lower rates of insurance, and the extension of motor transportation⁵ to areas not served by railroads and shipping lines. Modern transportation makes possible the production of a wider variety of goods for markets abroad; at the same time it extends the range of foreign competition. Foreign commerce has also been furthered by the creation of definite commodity standards and bases of trading, and by facilities for the settlement of disputes. And lastly, the modern system of money, banking, and credit is an integral part of the trading mechanism. World commerce has been stimulated by the extension of the gold standard, by the cross-currents of investment, and the facilities for financing the movement of goods. Speculative risks from fluctuations in foreign exchange have been greatly reduced by the narrowing in the spread

5. Within recent years the motor truck and motor transportation have been playing a conspicuous part in cementing the markets. Not only do they supplement the existing facilities, but they also reach into remote and formerly isolated regions.

between the specie points, as well as by the mechanism for largely neutralizing or transferring this risk.

This is a trading mechanism radically different from that which obtained in the days when the orthodox theory of international trade was formulated. To its influence in correlating the national price levels should be added certain consequences of the technological advances in industry, next to be considered. Together these two forces effect what is virtually an internationalization of the price structure of the modern nations.

Machinery and power equipment, the objects of an extensive world commerce, have displaced labor and a variety of local services; handicraft and local industries, drawing most of their raw materials nearby and selling the great bulk of their output within a comparatively restricted area, have given way to large-scale industries producing international goods and purchasing materials and equipment the world over.⁶ In agriculture, in the fisheries, and in the numerous industries which have to do with the manufacture or preparation of foods, this evolution from a regional or local to a world basis has led to far-reaching readjustments. Virtually the entire product of the great agricultural industries has become internationalized, in respect to markets and price influences, through the developments in manufacture, preservation (refrigeration and canning in particular), merchandising, and the development of foreign markets as well as competing foreign sources of supply. The

6. The boot and shoe and ready-to-wear garment industries offer a ready illustration of the displacement of handicraft trades; the concentration of meat packing, soap and candle making illustrate the displacement of local types of manufacture; and similarly, butter, cheese, and preserved foods, once chiefly made on the farm, are now factory products. The labor-saving devices — international goods — used in the factory and office, on the farm, in households, in construction, and on the streets, are familiar enough. There is a large foreign trade in them.

same development seems to be taking place in the fisheries. Nearness to raw materials is a factor of no great importance in those trades which, like textiles and flour milling, manipulate or combine materials without substantial loss in volume. Yet even where an industry utilizes bulky or perishable materials, the derived international goods react upon prices of what might otherwise be classed as local commodities. In this way the foreign quotations on manufactured dairy products influence the local price of fluid milk, manufactured fertilizers affect prices of bulky raw materials, and foreign prices of meats and animal products react upon prices of livestock and, less directly, upon feedstuffs.

Similar in effect are the achievements of industry in substituting or interchanging raw materials, and in developing new or substitute finished products — what is commonly known as “inter-industry competition.” This process of substitution interrelates the price movement of important and seemingly unrelated commodities, both international and local; and in the same way the competition of by-products interrelates seemingly distinct industries. Rayon fabrics compete with silk, lard substitutes and oleomargarine (mainly cottonseed oil and coconut oil) compete with lard and butter, oilcakes from cottonseed and tropical oilseeds compete with a variety of domestic sources of protein and ammonia — those produced by the meat-packing and allied interests, as well as the vegetable sources of these elements. In the same way nitrocellulose lacquers may be linked with linseed and other drying oils, synthetic nitrogen with Chilean nitrate, artificial leather with real leather, pyroxilin products and hard rubber with bone, synthetic camphor with Formosan camphor, synthetic roofing, insulating, and building materials with the more familiar materials used for these purposes, gas, oil, and electricity

with coal, coal-tar derivatives with natural dyes and perfumes. The list of directly competing materials and products is an almost endless one; and it is especially noteworthy that at least one of the competitive elements in most of these comparisons has been commercially developed within the past generation, many comparatively recently. The industrial processes have become infinitely more flexible and interrelated than heretofore. Consumers encounter a much wider range of commodities capable of serving the same uses, and differences in demand arising from local custom tend to disappear with the progress of education and the exploitation of foreign markets. Of necessity such advances result in a price structure extremely sensitive to world conditions of demand and supply, in manufactures as well as in raw materials. And lastly, the expansion of plant capacity and the economies of mass production seem to have emphasized the struggle for foreign trade.

In summary, obstructions to the free play of commerce notwithstanding, the forces of modern industry and trade make for increasing price and economic interdependence. These forces, to repeat, are the technological advances in industry, the improvement in the methods of transportation and communication, the forces of money, credit, and investment, and the intensive development of the mechanism of foreign trade. However generally recognized, their influence in welding the national price levels is not adequately taken into account in the theoretical emphasis upon domestic prices and upon domestic goods. The delocalization of industry — the displacement of local commodities and services by those of the international category — is, in fact, one of the striking characteristics of the present age. Regional price interdependence is further enhanced by the steady advances in the methods of distribution, and

by the growing control of producers over the marketing processes.⁷

III

With this background in mind, let us examine a few specific aspects of the regional price adjustments. The subject is of considerable practical importance; and some part of the existing confusion arises from the misinterpretation of certain kinds of sectional price irregularity.

Contrary to the usual definitions, neither substantial volume nor regularity of imports and exports is a condition essential to the notion of an international commodity; that is, in the modern trading nations. The relation of the actual movement of goods to price interdependence may be likened to the part played by the movement of specie in maintaining the rates on foreign bills of exchange near the mint pars. Relatively insignificant shipments of gold ordinarily suffice to maintain an approximation of parity. Shipments of international goods which are small relative to the world output ordinarily suffice to maintain a moderately close sectional price relationship. In both cases it would seem that a potential movement is sufficient to maintain the balance. Prices of merchandise fluctuate between the export and import points, just as the rate on foreign bills fluctuates between the specie points. Specie and merchandise are quick to move when regional prices diverge beyond the cost of shipment.

The analogy is suggestive, despite certain inherent differences. In merchandise the adjustments are of course much less close, owing to a variety of obstructions and to a higher cost of transport. Here, also, dif-

7. "Stock exchanges then are the pattern on which markets have been, and are being formed for dealing in many kinds of produce which can be easily and exactly described, are portable and in general demand." Marshall — *Principles of Economics*, p. 328.

ferences in the bases of trading — the units, the range of grades, incidental charges, and the like — make it much more difficult to measure actual correlations. Yet it will probably be granted that, in domestic markets, the sectional spread in wholesale prices of comparable merchandise cannot long exceed costs of carriage, even tho the actual movement of goods be slight, and at times non-existent. Similarly, as between international markets, the operations of an army of buyers, sellers, speculators, and traders, possessing domestic and foreign connections, and all alert to the opportunities for profit arising out of regional price differences, must of necessity tend to keep wholesale prices in line. The demand for virtually all the significant items of merchandise is after all an international demand.

Accordingly, the influence of the world markets upon domestic prices is not to be gauged either by the magnitude of foreign trade or by the physical presence of imports and exports. As everyone knows, modern business is carried on by cable, telegraph, and wireless; buyers and sellers alike often operate simultaneously in a number of foreign markets; and the interchange of bids and offers serves to maintain a certain equilibrium. Crop forecasts and news of accumulating or dwindling stocks influence the markets for the more sensitive products. No doubt it is ultimately the movement of goods that brings prices in line, but at a given moment the price for articles actually in the market continues to be influenced by the market psychology. Most transactions are forward contracts; forward prices of finished goods are based upon prices of raw materials; and merchandise can be quickly trans-shipped or diverted from one market to another. Whatever the lapses of business in other directions, the prices of raw materials, and the quotations of competitors upon finished products, are both

followed with the most unremitting attention. These are the motor nerves of industry.

Lag or "play" in the sectional adjustments does, of course, exist. It is not to be expected that all markets will be in precise hourly or daily accord. In the successive steps of production and distribution — from raw materials to finished product, wholesale producers to wholesale distributors and retailers — resistance to change steadily increases. A cumulatively larger proportion of the value of the article consists of labor and services of various kinds; and these are local goods, relatively constant in price, and relatively insensitive to external conditions. The closer the approach to the consumer the less is the fluctuation in absolute prices and the greater the difference in regional prices. Foreign commerce is characteristically a trade of large individual transactions, carried on by organizations well informed as to the commodities and prices. Many buy and sell both at home and abroad. Yet even in such wholesale merchandise, local conditions and sentiment, the systems of distribution, and the customs laws in particular, are all causes of more or less variation.

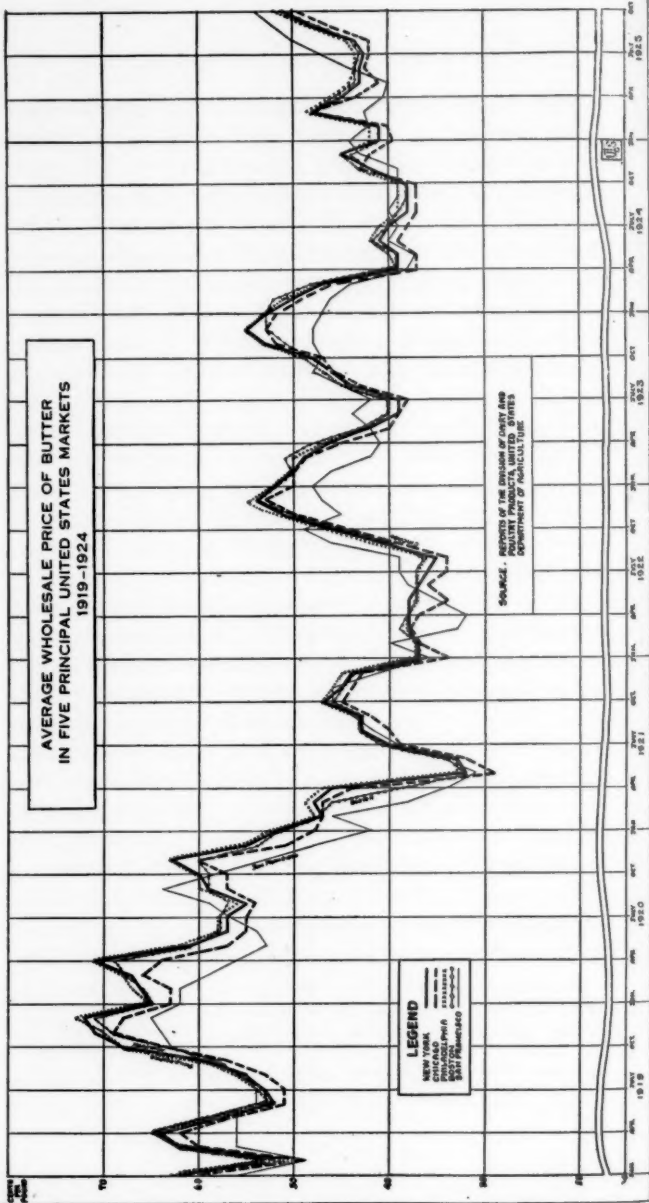
Another cause of price irregularity needs to be considered. From year to year, even from season to season, some countries shift from an export to an import basis in individual commodities. Such commodities do not pass back and forth from the domestic to the international category. Under such conditions, domestic prices oscillate within a range measured by costs of carriage and customs duties, the broader movements being determined by world conditions. Illustrations of such irregularities need to be treated with care, owing to the complications introduced by the geographic trend of prices, as well as the fluctuations in the cost of movement. Two examples will suffice — wheat and butter.

Were it not for the American tariff, Chicago wheat prices would remain at the export point, substantially on a parity with Winnipeg, irrespective of a deficiency or surplus in the United States.⁸ The huge surplus of the western provinces of Canada regularly flows to Europe by way of Canadian and American channels, with substantially equal costs of transport by either route. The tariff alters the situation. The play of domestic markets behind the customs barrier causes domestic prices to oscillate independently between the changing export (Winnipeg) level and the limit imposed by the duty of 42 cents per bushel. Under such conditions, Chicago prices ordinarily rule from 5 to 30 cents above the export basis, almost never 42 cents higher. To introduce the complications arising from the Pacific and soft wheat movement would complicate the discussion beyond present needs.

Butter exemplifies a typical situation in commodities erroneously classed as domestic: a large domestic production, insignificant exports and imports, and a measure of independent domestic price fluctuation coexisting with a basically international price movement. Our first chart compares quotations in five domestic markets, including New York, Chicago, and San Francisco. (The grade quoted is 92-score creamery.) The correlation is striking. San Francisco, which shows some variation, is a market for the secondary area west of the Sierras, shipments to or from the producing regions to the East being relatively small. During the period covered by the chart the Pacific Coast exported small quantities during

8. One usually very careful economist observes that "If the cost of wheat in Liverpool is \$2.00 and remains \$2.00, and the cost of transportation in either direction between Chicago and Liverpool is 40 cents, the Chicago price of wheat may settle at any point between \$1.60 and \$2.40" (a difference of 80 cents aside from tariffs). Liverpool would not ship wheat to the United States.

**AVERAGE WHOLESALE PRICE OF BUTTER
IN FIVE PRINCIPAL UNITED STATES MARKETS
1919-1924**



LEGEND
 NEW YORK
 CHICAGO
 ST. LOUIS
 BOSTON
 PHILADELPHIA

SOURCE: REPORTS OF THE BUREAU OF MARKET AND
 PRICING, UNITED STATES
 DEPARTMENT OF AGRICULTURE

the early season of flush production and imported some in the fall from Australasia and Canada.

Prices of the chief dairy products parallel those of butter, tho the correlation is not as high as in the chart here shown. It is usually feasible to divert much of the fluid milk to condensed milk, butter, and cheese. Because of this actual or potential substitution, the price movements of the main dairy products, with an annual output of about 2 billion dollars, are rather closely related to those of butter.

The next chart⁹ compares, for the period January 1921 to October 1926, the New York prices of the same representative domestic grade, with London prices of Danish and New Zealand butter. The American production and consumption, about 2 billion pounds, is about twice as large as that of any other country; annual exports during the period were 0.2 to 0.5 of 1 per cent, annual imports from 0.5 to 1.0 per cent. England annually imports about 500 million pounds, London being the dominating international market.

Accordingly, the physical connection between London and New York was of the slenderest sort. Moreover, the chart compared somewhat different qualities. The movement from the United States was small and variable; for long periods the London market reports contain no quotations on American butter. Imports into the great New York market were likewise variable, the foreign product was not well known, and there then did not exist established facilities for its distribution. The Danish coöperatives sometimes diverted shipments to New York in order to avoid a glut in their main outlet.⁹

9. The relatively small American exports were widely diffused — they went to Canada, the West Indies, and Panama; and a good part moved from the Pacific Coast. In 1921 and 1925 shipments to England were nil; in 1923, they were 309,000 pounds, and in the other two years around 3 million pounds. American imports came chiefly from Canada,

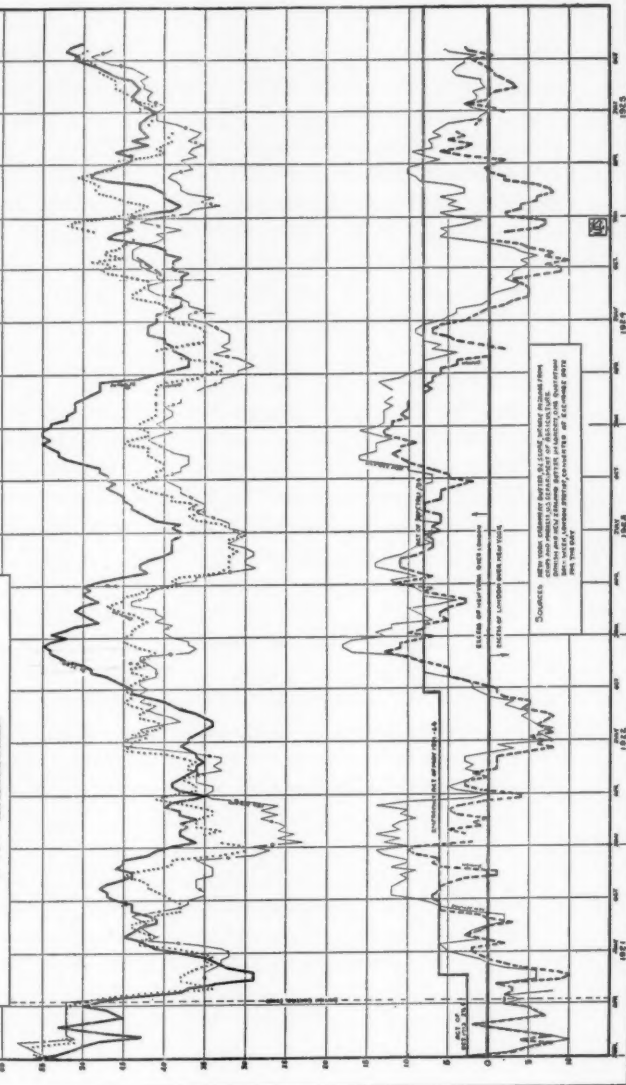
When account is taken of such factors, the similarity in the broad price movements of the two markets is striking. It will be observed that during the season of heavy production in spring and summer, when much butter goes into storage, New York prices recede close to the export point, rising well above the London quotations during the fall and winter, when a shortage of the better grades is often felt. During the first part of the period covered by the chart the trade felt the influence of the British butter control. Beginning with October 1922, the American tariff was 8 cents per pound, and from that time New York prices (paralleled by those of other cities) ranged from about 13 cents above to 10 cents below that of London, tho the usual spread was much narrower. Whenever the New York premium rose well above London, imports sharply increased, the spread narrowed, and imports declined. Throughout this period the American price seldom moved out of the range delimited by the shipping radius — freights and the tariff.

On the whole, the articles which in a given nation oscillate between the import and export basis, tho not unimportant, are relatively not numerous. A nation or a region is steadily either an exporter or importer of minerals such as copper, nickel, vanadium; of meats or other foodstuffs, of raw materials such as rubber, petroleum, wool, fertilizers, silk, sisal, cotton; and it is steadily either an importer or exporter of different sorts of machinery, textiles, chemicals, iron and steel products.

Denmark, and New Zealand, the shipments entering along the northern border from Washington to Maine, as well as in Hawaii, in the Pacific and Atlantic ports. However, when imports were as large as 1 per cent of domestic production, about 14 million pounds, or half, came to New York. The metropolitan district of that city annually consumes about 150 million pounds. For the source of these charts, and details of trade and costs of production, see U. S. Tariff Commission, *Butter*, Report . . . to the President of the United States (Washington, 1926).

Average Wholesale Price of Butter in London and New York, 1921-1925.

— OF SCOTLAND NEW YORK
 LONDON
 - - - - - LONDON WITH ADJUSTMENT



SOURCES: NEW YORK: COMMISSIONER OF CUSTOMS AND EXCISE, BUREAU OF STATISTICS. LONDON: LONDON BUTTER TRADE ASSOCIATION, LONDON. LONDON WITH ADJUSTMENT: LONDON BUTTER TRADE ASSOCIATION, LONDON.

Only over long periods of time and through striking industrial or local developments does a region alter its status in this respect. To this cause is to be added the geographic factor, already instanced in wheat. To illustrate further, a surplus or a shortage of foodstuffs in Ohio, or of cotton in Louisiana, would not substantially alter the regional price map, because in either case the western surplus flows through these states.

We turn now to the consideration of a class of bulky products, the rail movement of which is limited by high freight charges. Iron and steel products offer an interesting illustration. In such bulky commodities the cost of carriage forms a much higher part of the delivered price than it does in butter. It seems sufficient to quote, without cumbering the text with charts and statistics, the results of a study of American, British, German, and Belgian prices for the years 1921-27. In none of the main items of iron and steel do imports into the United States exceed 1 per cent of the domestic production. Exports, tho larger, still constitute a small fraction of the huge domestic output; and these chiefly move to North and South America and to the Orient. "In all the countries, except Germany, a marked similarity in prices is observable." American prices are usually on a higher level; price spreads increase or diminish with changes in import duties; during periods of strong domestic demand the American producers are enabled to obtain a price higher than the foreign price by the full amount of the duty.¹ The observed parallelism of prices is all the more striking in view of the delimitation of "spheres of influence," the practice of quoting lower prices for export, the aids given European producers in the form of lower

1. Abraham Berglund and P. G. Wright, *The Tariff on Iron and Steel* (Washington, D. C., Brookings Institution, 1929), Chapter VII.

export freights and of lower costs of fuel when used for exported products, and the like.

Again, in the course of tariff hearings domestic manufacturers contend, and rightly contend, that the volume of imports is not an adequate measure of the influence of foreign prices or the severity of foreign competition. The foreign quotations, which if pressed they are forced to meet, affect prices and profits. A corporation will continue unprofitable operations for months, even years, in the hope of a turn. The alternative is the costly one of closing down and scrapping much of its investment. This it is which accounts for the puzzling clamor for higher duties in the face of relatively small imports. In like manner the imports of bulky products — European cement, brick, iron, and steel — at the Atlantic and Pacific seaboard affect prices at these points, the reductions radiating into the interior markets. Allowing for a measure of exaggeration, these contentions do nevertheless indicate the sensitive character of the regional price adjustments.

Another aspect of regional price correlation is illustrated by the movement of meat animals. Owing to quarantines, the foreign commerce in meat animals is in the main a restricted border trade; and the relatively high cost and the conditions of transportation limit re-shipment from market to market. The animals lose weight and condition; their value is further impaired by bruising and other injury in loading, transportation, and unloading; feed, water, and care must be supplied for long hauls. Yet prices in the Atlantic and Pacific markets parallel those in the meat-packing centers in the interior. It is of course the potential movement, of live animals and meats, that keeps prices in line. Shippers at the "divides" — the regions tributary to two or more

markets — keep abreast of quotations and route their consignments to the higher markets.

These illustrations convey the impression of a greater degree of price uniformity than can be justified by the defective price data. In practice, it is extremely difficult to make close price comparisons, market by market. Save for a few important raw materials, the data are usually quite inadequate. A comparison of daily or weekly prices in any two foreign or domestic markets is commonly a comparison of two fairly wide daily or weekly ranges of price; and these two wide ranges commonly represent, not price fluctuations, but differences in the qualities of the merchandise in the markets. That is, quotations in one market often represent transactions in a superior, and in the other, in an inferior or a different grade of the same commodity.² The nomenclature or content of these classifications at home and abroad is usually quite different. Moreover, we have in fact two types of markets, the cash or spot and the future or forward, the latter comprising the bulk of the business. Unreported discounts and credits of varying duration, the date of delivery, and the magnitude of the individual transactions, all play a part in the unit price. Only the buyers and sellers, as a general rule, are in possession of the requisite information.

Differences such as these virtually preclude significant comparisons of many highly finished articles. Yet in important classes of goods (motor cars, electrical equip-

2. British home-grown wheat is soft, while the bulk of the imports consists of hard wheats. Italy imports more largely of still another class, durum wheat. The relative value of these classes of wheat, and even of the subgrades, varies materially from year to year. England imports large quantities of frozen meats, differently valued than the home-slaughtered fresh meats. Or again, the British markets often report for "fair average quantity" of some products, difficult to reconcile with the nomenclature of the exporting regions. No doubt the spot buyers are fully conversant with the relative values of such materials.

ment and machinery generally, chemicals, some classes of textiles) producers deal more or less directly with manufacturing consumers, and prices are fairly well maintained. Quotations are reckoned f.o.b. the producing point; and such quotations as a rule do not change frequently and materially. On the other hand, in extractive products, where wholesale distributors intervene between numerous producers and retailers or consumers, the price variations are larger and more frequent. In both classes of goods, the elements in the cost of movement are subject to change; this being especially true of ocean freights and the import and export tariffs. Customs requirements as to labels, packages, and declaration are also fairly important. For all these reasons the widening or contraction of the price spreads, as between different markets, is often merely a change in the cost of movement.³ In measuring the correlation of the different markets it is virtually impracticable to abstract from such causes of variation.

Not all the regional price differences are to be ascribed to defective data, costs of transport, and customs laws. Time and place utilities do, of course, cause a great deal of more or less temporary deviation in the trend of the markets, particularly in the staple products. The system of distribution does not function smoothly. More important are the disturbances in transportation, corners, cartels, dumping, price-fixing agreements, and quarantines, and a variety of other obstructions to the free play of the price-leveling processes. Local regulations also play a part. For example, many American

3. Scrutiny of the methods of assembling market reports does not enhance confidence in these data. It is not to be expected that the daily or weekly chore of procuring such information is to be covered by specialists thoroughly familiar with the commodities, or that the reporting concerns will accurately and freely disclose details of individual transactions.

municipalities require that structural steel used locally shall be inspected by designated officials at the time of production, and such steel must bear the "heat number"—an identification of the melt or batch. Therefore it is not usually permissible to utilize foreign structural steel. Yet the basic material, pig iron, is imported, and this introduces a measure of price uniformity. Similar complications in the trade in animals and meats have usually been solved by the reciprocal acceptance of the national inspection.⁴

Despite all the limitations of the price data and the various reasons for deviation, the parallelism in the general movement of the national prices at wholesale seems to be unmistakable. It is shown by the trend of the national indices as well as by comparisons of commodities for which adequate statistics are available. *A priori*, the correlation in particular prices should be much closer than is indicated by the statistics.⁵ The great bulk of the world commerce consists of competitive articles, produced by a number of nations, even though a like product may not be made in the importing country.

4. It is worthy of note that world prices of many products tend to follow certain pivotal markets, usually great consuming and distributing centers such as London, New York, Liverpool, Chicago. These markets are points of registration for the international influences. Similarly, certain portions of the supply exert a disproportionate influence upon such prices. With North American wheat and copper strongly held, a disproportionate influence is exerted by Argentine wheat and African copper.

5. "In practice, however, when the member [of the London Baltic Exchange] had worked out the cost of chartering the ship, and the cargo, insurance, etc., he would quite likely find that the price he could offer to sell at was 2s. more than the man next to him.

"Usually, therefore, he is not able in practice to carry through all these transactions in one day, and has to estimate the total cost when dealing with a view to future prices. . . .

". . . Each morning the grain brokers ascertain from shippers what cables have come in with information bearing on their market, . . . find out what is offered . . . the qualities, dates for shipment and other details."—S. W. Dowling, *The Exchanges of London*, 1929, p. 155.

Under competitive conditions the sales abroad are not likely to be made at a price substantially different from that received at home. Consequently this large and varied foreign trade alone is indicative of the internationalization of the wholesale price structure. That of the United States approximates 9 billion dollars annually; and the per capita foreign trade of a number of nations is much higher, even though the aggregate be less. Through the inter-commodity and inter-industry competition illustrated in the preceding section, the influence of foreign markets is quickly transmitted to commodities not directly affected by imports and exports. Furthermore, the organization and extent of the mechanism for foreign trade — its sensitiveness, the intensiveness with which its possibilities are exploited, and the manner in which it articulates into the domestic processes of distribution — suggest that regional price disparities are not likely to persist.

In summary, given the modern mechanism for international trade, a substantial and persisting foreign commerce is not essential to regional price uniformity in merchandise for which there is an international demand. A relatively small flow of specie normally suffices to maintain rates of foreign exchange within the mint parities. In like manner, the counter-currents of bids and offers for merchandise, supported by a relatively small movement, ordinarily maintain regional prices within the import and export points. In merchandise, however, a market tends to be consistently upon either an import or an export basis. Here, also, there is a larger measure of price irregularity, mainly because of the local and national obstructions to the price-leveling process. The magnitude of the foreign trade, its competitive character, its organization and inclusiveness, are all indications of the essentially international character of the pricing

process. Lastly, it is the primary or wholesale, not the retail, price with which this section has been concerned; with articles or merchandise, not services. The significance of these distinctions will shortly be seen.

IV

What commodities are to be classed as "domestic"—presumably local—in contradistinction to those which are international? According to received theory, the great bulk of the national goods are of the former category. It seems plain, however, that part of the existing confusion arises from the lack of precision in the use of the terms "prices" and "commodities."

Non-merchandise items comprise the great bulk of the commodities which are less sensitive to foreign markets. Plainly, this group embraces labor and services of nearly all descriptions, including those of communication and transportation; the services or goods purveyed by the public or quasi-public monopolies, such as power, heat, light, and water; "house accommodations and shelter," or land, buildings, and real estate generally. These make up a large and important class of commodities, relatively free of direct competition from other regions. The price of some is fixed by local or national regulation, of others by long-term contracts and agreements. Custom and local standards play a part in the existing levels. Regional price differences tend to persist; the effect of market conditions abroad is mediated through the international goods.

Labor, public services, and the like are of course not exclusively domestic or local. There is some international movement in services, and a small but growing foreign sale of the services of the public utilities. Foreign shipping is an international service, tho the coastal and inland shipping is customarily a national monopoly.

By and large, however, labor and the various services are characteristically local commodities.

If now we turn to the great and heterogeneous class of merchandise, a distinction must at once be drawn between merchandise at wholesale and retail. Articles or merchandise may be international in the wholesale and local in the retail stage. Indeed, the retail function partakes of the character of a local service, and properly should be grouped with labor and other services.

It is primarily the wholesale price, in purchase and sale, that concerns producers, importers, exporters, traders generally; prices at retail are based upon this more sensitive primary price; a large, if not the major portion of the labor and local services goes to the production of wholesale merchandise and must be reimbursed from the fruits of its sale. The pervasive notion of independent national prices applies not only to goods in general, but to merchandise as well.⁶ To be sure, a minor portion of the national product enters into foreign trade; yet no one would seriously contend that the direct influence of prices abroad is restricted to the actual imports and exports. It extends, of course, to the entire domestic output or consumption of the particular com-

6. Wieser, for example, holds that world markets exist for only a small fraction of the total number of products; the proportion of goods which actually enter international trade is extremely small, and even for these articles obstacles of a socio-historical character impede free movement. It is therefore beside the point to speak of "equality" of prices as between nations. — Angell, *op. cit.*, pp. 350, 356.

Similarly (Taussig, *op. cit.*, pp. 34–35): "The fundamental features of the situation, so far as its analysis has been carried hitherto, are that prices are the same in the two countries, while money wages vary. . . . So far from its being the case that each and every article is made solely in one country and thence sent out to others — that all enter into foreign trade — it is more generally true that the goods made in a given country are sold and used in that country only. The conditions of international trade affect not the whole of a country's trade but only a minor part of it. We must distinguish between the *international* and the *domestic* goods."

modity traded in; often to directly competitive yet apparently dissimilar products. The question of the inclusiveness of the international category resolves itself into the simple matter of ascertaining what commodities fall within the leveling influence of foreign trade. The surprising illustrations of domestic commodities clearly indicate that the emphasis upon the domestic price basis of products or merchandise is not merely the result of a failure to distinguish between wholesale and retail prices, though vagueness on this score has no doubt contributed. It is illuminating to consider these illustrations.

Agricultural products are most commonly cited. Meats and most provisions, suggested by Cairnes, were doubtless local or domestic commodities in the middle of the last century, but of course are not so today. Yet the food products suggested by later writers are not happy selections. World exports of butter are close to a billion pounds; of cheese, over 700 million, and of condensed milk about 900 million. These concentrated products are equivalent to a huge volume of fluid milk; and as explained before, the trade in these products brings virtually the entire output of the dairy industry into the international category. To this class, likewise, must be allocated the great bulk of the perishable produce, such as "eggs, fruits, vegetables." Such foodstuffs, fresh, dried, canned, or prepared or preserved, are among the larger items of world commerce. Of fruits, the United States alone exports from 100 to 150 million dollars annually. A growing part of the farm acreage is devoted to the production of raw material for canneries and preserving establishments, which also absorb a substantial portion of the surplus of the fresh or unpreserved product.

The trade in fresh produce itself is of no small propor-

tions. Cold storage and refrigerated shipment have immensely extended the shipping radius of such produce; seasonal as well as regional price spreads have thereby been greatly reduced. The recent advent of a new refrigerant — "dry ice" (carbon dioxide gas) — promises a further expansion in this trade. When trainloads of perishable produce are shipped over 3,000 miles from California to the Atlantic markets these can scarcely be termed local commodities. England, likewise, imports such produce from Mediterranean and even American sources. Even China ships large quantities of eggs in the shell, as well as frozen and dried eggs, to Europe and to the United States.

In sum, the products which bulk largest in the agricultural economy of the nations — cereals, vegetable and animal fibers, meats and animal products, dairy products, sugar, coffee, tea, cocoa beans, spices, and the principal fruits and vegetables — are beyond question international products. If to this trade there be added that in canned or preserved and fresh produce, the conclusion is inescapable that the price level of the overwhelming proportion of the products of agriculture is upon an international basis. Tariffs and fluctuations in harvest — the oscillations between the export and import basis — alter the regional price relationship, but the price level remains subject to international conditions. Quarantines, however, do dissociate domestic from foreign prices. The American quarantines prohibit, directly or indirectly, the import of a number of farm products. Common or Irish potatoes, for example, may be imported only from Canada and certain of the West Indies; foreign sweet potatoes are entirely barred. Hay must be thoroughly sterilized, a requirement which for the baled and compressed hay of commerce, precludes importation except from Canada, exempt from

the requirement. The import of Argentine beef and of Asiatic citrus fruits and corn, is prohibited. These are but a few illustrations of partial, complete, and indirect quarantines which impede the free movement of farm products. Yet the great bulk of the agricultural products is not materially affected by such regulations.

By and large, therefore, nearly the entire output of agriculture must be assigned to the international category. In the much less important industry of the fisheries the situation is not so clear. The larger items — salmon, sardines, shellfish, the fish oils, and a variety of salted or brined, dried, kippered, and otherwise preserved fish— enter into a substantial world trade. In a considerable number of varieties, however, the trade is largely local, either by reason of the smallness or variability of the local supply or of various limitations upon distant shipment. Moreover, present national policies respecting the catch of and trade in fish are in many respects reminiscent of the policies embodied in the colonial navigation laws. Fishing in inland and coastal waters is a national monopoly reserved for citizens or nationals; and it must be carried on in vessels built or registered within the controlling nation. Furthermore, in the United States and in Canada (save for one or two exceptions) no foreign vessel may clear for a domestic port directly from the fishing banks. These conditions limit foreign trade in fresh fish. Yet, all such restrictions notwithstanding, it is probable that the larger portion of the output of the fisheries falls within the sphere of international trade.

Minerals and lumber are of course dominantly international commodities; and the situation with respect to industrial products is similar to that in agriculture. It is surprising to observe among the domestic commodities such items as tools and machines, wagons and harness,

clothing and boots, as well as boards and lath, doors and windows, locks and hinges. Of the British annual consumption of nearly a billion cubic feet of wood of all descriptions, nearly 95 per cent is imported, a good part of it consisting of sawed timber such as flooring and boards, and of small dimension stocks, such as staves, heading, shooks.⁷ The United States imports about 2½ billion feet of shingles, boards, and other sawed lumber, and exports a much larger quantity. If doors, windows, and the like do not enter into this commerce, it is doubtless because of the infinite range of required forms and dimensions, making it necessary to fashion such articles locally. The bitter tariff controversy over such articles as bentwood chairs indicates the potential extent of the trade in manufactured lumber. Tools and machines, likewise, are among the major items of world commerce. Mining, mill, plant, and power equipment is extensively imported and exported. Of course, the more ponderous equipment is sent "knocked down" and reassembled at the point of destination or use. The trade in ready-to-wear garments and wearing apparel in general is extensive and varied.

In the same manner one may dispose of other so-called domestic commodities. All that is necessary is to refer to the statistics on the foreign commerce of the great trading nations, noting the commodities, origin, destination, and magnitude of the trade. It will also be illuminating to consult the Commerce Reports of the United States Bureau of Foreign and Domestic Commerce, or similar reports of other nations. Here appear discussions of the present extent and potential future of foreign commerce in an infinite variety of merchandise which might be regarded as domestic — office and

7. U. S. Bureau of Foreign and Domestic Commerce, Commerce Reports, January 12, 1931, pp. 85-86.

household furniture of steel and wood, apparel, plumbers' supplies, cosmetics, umbrellas and sunshades, construction materials, blacking and polishes, boots and shoes and leather, paper and stationery, utensils, medicinal preparations. It is doubtful whether even cement and building brick can be classed either as domestic or local. To be sure, costs of rail transportation are high, relative to the value of the product, but it is not necessary that the foreign product should be physically present in a large portion of the national market. Low costs of carriage by water bring markets near the seaboard and near navigable waters close to foreign sources of supply. The border markets likewise feel the impact of foreign competition. Evidently the interior markets must feel the repercussion of foreign price levels.⁸

Nevertheless, it must be recognized that the interaction of the markets rests upon modern methods of transport and communication, by means of which local supply and demand is quickly balanced. It rests, also, upon the existence of an international demand for the domestic merchandise. Backward and undeveloped regions, and those with peculiar or distinctive commodity requirements, are obviously much less subject to the influence of prices abroad. Here the influence of international prices is restricted to a limited range of export and import commodities — minerals, textiles, wheat, silk, rice, jute, tobacco, wool, and the like. The generally accepted notion with respect to the prevalence of

8. Measured by freight rates, Atlantic and Pacific Coast markets for many commodities, are nearer to northern Europe and to South America than to interior domestic producing sections. On pig iron, for example, the rail rate from Pittsburg to Philadelphia and New York, for example, is \$4.91 and \$5.42 per long ton; from northern Europe the ocean freight is ordinarily less than half of this figure. Blast furnaces at the North Atlantic ports rely principally upon ores imported from Chile, Sweden, North Africa, and Cuba. Of steel, the bulk of the imports enter at Pacific and Gulf ports.

domestic goods and domestic price levels conforms much more closely to conditions in such backward regions than to those in the modern nations. The merchandise requirements of the latter are largely composed of identical goods. The differences in the standards of living are differences in the quantity, quality, and relative consumption of the various commodities.

Returning now to the initial question, in the modern nations what articles at wholesale are free from the direct influence of foreign prices — we ask, what are domestic or local commodities? Restraints upon trade — high tariffs, quarantines, and the like — do create a number of such commodities. The nations are aggressively expanding and improving the costly mechanism for commerce and communication — railroads, motor roads, air lines, shipping, cable, and wireless — even while they attempt to impede the necessary consequence of this process; that is, the internationalization of the national price structure. Apart from the commodities affected by such restraints, it is not easy to cite instances of local or domestic merchandise, at wholesale. Berries, watermelons, and flowers may be so classed; also certain perishable foodstuffs not produced locally in sufficient volume to warrant organization of distributive machinery or preservation; various products of the fisheries; sand, gravel, and stone, everywhere abundant and cheaply quarried. There are, in addition, specialties which cater to a domestic or local demand: sharks' fins, birds' nests, and ducks' eggs of ancient vintage, esteemed as delicacies in China; distinctive textiles and articles for household use, curios, and the like.⁹ Manifestly the entire class is of relatively small importance.

9. As everyone knows, not a few of these colorful local products — *e.g.*, rugs, shawls, curios, etc. — in fact originate in factories of the western nations; and the local products of apparel and daily use have often been superseded by imports from the industrial countries.

Yet it seems a commonplace of ordinary observation that gold prices of commodities vary greatly in different countries. "It will need no proof that price levels in the various countries differ widely. Anyone who has travelled abroad must have come to the conclusion, even on superficial observation, that, in exchange for the same value in money, much more can be obtained in one country than in another."¹ But are not the things which fall under the observation of the traveller mainly "local" goods — merchandise at retail and services? It will hardly be contended that, in the modern nations at least, *wholesale* prices of comparable merchandise vary beyond the limits set by costs of distribution and customs dues. Between wholesale and retail prices intervene a large number of comparatively stable local charges. Such are wages and salaries, rents, transportation, communication, taxes, advertising, power, light, and the various charges or tolls exacted by the local distributive organizations. Climate plays a part, insofar as it affects fuel consumption, shelter, and costs of business generally. Obviously the various local charges likewise enter into the cost of merchandise at wholesale. Yet the direct competition of other regions tends to equalize wholesale prices; while the persisting disparities in local charges are more conspicuously reflected in prices at retail, comparatively exempt from the direct competition of other regions. How these differences in money wages and costs of local services are enabled to persist, in the face of the tendency toward uniformity in wholesale prices, is beyond the field of our immediate interest.

In sum, merchandise consists largely of international

1. L. J. A. Trip, "International Price-Level Adjustments," League of Nations, Selected Documents Submitted to the Gold Delegation of the Financial Committee (Geneva, 1930), p. 82.

goods, even tho there be gradations in the sensitiveness of particular articles to foreign price influences. By breaking down commodities into merchandise on the one hand, and services and a variety of more or less immovable goods on the other, and by breaking down merchandise prices into wholesale and retail we obtain a clearer notion of the interaction of the regional prices. The impression of diverse local prices for merchandise at wholesale may be further lessened by a rough perspective of the distributive mechanism.

In one class of merchandise, mainly producers' goods, manufacturers commonly deal directly with manufacturing consumers. This is the more common way of marketing plant, mill, and mining machinery, iron and steel, a number of metals, heavy chemicals, cast-iron pipe, farm machinery, cloth, rayon, major office appliances, and a variety of other products. Broadly characterizing such producers' goods, the number of purchasers — manufacturers and consumers — is much less than in the other classes; the individual transactions are of substantial proportions; and prices, usually based upon the point of production, are strongly maintained. That is to say, the divergence in local prices is limited to costs of movement from the main producing centers.

Manufacturers of a second class of merchandise usually sell directly to retailers. Here we find such items as household furnishings, pottery, hardware, apparel, coal, meats, plumbers' supplies, manufactured tobacco, flour. The number of producers is, as a rule, larger than in the first class, while consumers are numerous and widely dispersed. Here, likewise, quotations are based upon the point of shipment. Usually the manufacturing establishments of particular commodities cluster around a few favorable points. It is to be noted, again, that while gasoline and oil, motor cars, radios, and many kinds of

equipment nominally fall into this class, prices and sales methods are controlled by the manufacturers, who often maintain subsidiary wholesale distributing organizations. The basic price is the producers' price f. o. b. factory; and in many of these commodities the producers fix the resale price.²

In the third class, commission merchants, jobbers, and traders intervene between producer and retailer. Farm and forest products comprise the bulk of this class. Jobbers and wholesalers also deal in yarns and grey goods, some metals, druggists' preparations, toilet articles, and a variety of products included in the other two groups. The line of cleavage cannot be sharply drawn. The tendency of modern industry, however, is to eliminate the independent wholesaler or jobber. In recent years this tendency has made notable headway in agriculture, and the farmers' coöperatives now market several billion dollars of produce annually.

Of the mechanism for foreign trade something has been said in the second section of this paper. Here we have attempted a tentative and crude outline of the mechanism of distribution in the domestic trade of the United States, insofar as it affects local price levels. It does not pretend to inclusiveness. Even a cursory examination, however, suggests that it is where jobbers, commission merchants, and the like, intervene between producer and retailer that we find the largest measure of irregularity in the topography of prices. This irregularity is more conspicuous in the infinite variety of agricultural products. Nevertheless, it is noteworthy that

2. The spread between wholesale and retail prices, and the local differences in the retail prices, are both being reduced by the advances in this field, notably the operation of the chain stores, the mail order houses, direct producer-to-consumer marketing, fixed resale or standardized prices, and the like. Motor transportation is, of course, playing an important part.

the wholesale distributors are located in the larger centers of population, rarely in the small cities or towns. Cities such as Chicago, Kansas City, Denver, and San Francisco distribute merchandise to retailers in a wide tributary area; and they concentrate and distribute the produce of this territory. The competition of these distributing centers has done much toward reducing the regional differences in retail as well as producers' prices. In recent years the motor truck has played an important supplementary rôle. The main point in the present connection, however, is that in the wholesale trade we find a comparatively small number of closely interrelated centers of distribution and concentration. Each of these wholesale centers is a price-basing point for retailers and producers in a large tributary region.

The conditions attending the marketing of the first two classes of goods — those sold directly to consumers and to retailers — suggest the existence of well-defined and stable regional differences in producers' or wholesale price. Even in farm products the local price levels exhibit a more clearly defined pattern than one would expect. The price level shows a continuous gradation, rising in the direction of the flow of the various products. The price map, consisting of what have been termed "isotimes" (zones of equal price), varies with the different kinds of merchandise. Conditions of the moment affect the conformation of these zones, but the normal ratios remain fairly constant, for the direction of the flow changes only slowly. Two simple illustrations may indicate the character of these regional adjustments.

The regional differences in the level of producers' prices (of comparable qualities) are much less than a cursory examination of the cost of transportation would suggest. At the "divide" just east of Oregon, cattle are shipped eastward to Chicago and westward to Portland.

Assuming a freight to Chicago of \$2.25 per 100 pounds, and to Portland of \$1.25, the spread between the two markets is only \$1.00, compared with a freight rate of \$3.50; and the spread is less at intermediate shipping stations. With a Chicago price of \$12.25 per 100 pounds, Portland price tends to be \$11.25 if cattle are to be drawn from the marginal area. At Pittsburg, prices are higher than at Chicago, and New York is higher than Pittsburg. The divide or zone of indifference shifts its location from time to time. Were it to move eastward and the freight rates to Chicago and Portland become identical, prices in the two markets would tend to be equal.³ These conditions vary from product to product, and from season to season. California and Pennsylvania, for example, are both wheat deficiency areas; both receive wheat and flour from the Upper Great Plains region. For wheat of comparable quantity grown in the two deficiency states, the price spread is small, being limited to the difference in freight rates from the intermediate surplus-producing zone, which in turn is geared to prices abroad.

Conditions of this sort need to be evaluated in considering the interaction of domestic and foreign markets. Through the competition in a common market, say London, of exporting sections of several nations, the impact of foreign prices is transmitted to other points of the compass, beyond the immediate path of the international movement.⁴ In short, the domestic and foreign price zones are organically related.

3. A theoretical formulation of these regional price differences appears in F. A. Fetter, "The Economic Law of Market Areas," *Quarterly Journal of Economics*, May 1924, xxxviii, 526-29.

4. The producing centers are foci of generalized hyperbola, and the focal radii bring regional prices into a closer accord than the external factors would suggest.—Harold Hotelling, "Stability in Competition," *Economic Journal*, March 1929, xxxxi, 505.

To recapitulate, the market value of goods is of course expressed in terms of local prices; there is no single international or domestic price.⁵ A difference in the degree of interdependence — correlation — of these local markets is the essence of the distinction between international and domestic commodities. In merchandise at wholesale, so preponderant is the sensitive international category that there is here little purpose in the distinction between the two classes of goods. The real line of cleavage is between merchandise at wholesale on the one hand, and labor, services (including the retail function), and a varied class of goods lacking in portability, or subject to local monopoly, on the other. In regions connected by modern means of communication, the local (gold) prices of merchandise at wholesale tend everywhere to seek a common level. It is not essential to the interaction of the regional prices that the foreign product shall be physically present, in volume, in a substantial number of domestic markets. Where, as in the great staples, the system of distribution is well organized, prices are directly and quickly transmitted with a minimum of actual trade; in many products regional changes are indirectly transmitted, in something of a wave-like movement.

Lastly, it is a noteworthy fact that in the category of goods less sensitive, wages at least show a regional gradation strikingly similar to that in merchandise. Farm labor offers a ready illustration; it is probably less mobile than other classes of labor; it rests on the lower range of the economic scale; and differences in skill, for the type covered by these averages, are on the whole not signifi-

5. Save perhaps in a few staples, where a great free market and place of concentration is commonly accepted as the point of registration — as the international price. The London price of rubber and copper and the Liverpool price of wheat are in this sense regarded by traders as the basic international price.

cant. In the states along the Atlantic seaboard, farm wages graduate downward toward the South — from \$81 per month in Connecticut to \$59 in Pennsylvania and \$26.50 in Georgia, rising to \$35 in Florida. Along the southern tier of states they ascend westward to a peak of \$90 in California, higher than in any other state. The same upward movement towards the West is also to be observed in the northern tier of states and in the interior. The New England area seems to be an exception, in that prices rise from Maine southward to a peak in Connecticut.⁶

These are monthly cash wages of "regular" farm labor, as of January 1, 1929, board not furnished. The value of board, as may be expected, tends to vary directly with the wage levels. The reduction, when board is furnished, is \$8 in Georgia, \$28 in California, and \$21.75 in Pennsylvania. The average for the United States, without board, is \$47.24; with board, it is \$33.04; and these averages have stood at virtually the same figures since 1923. The regional differentials do not greatly vary from year to year, but the wage disparities between states are sometimes as large or larger than would be shown by a comparison of particular states with some foreign countries. Taking the lowest state as a base, the range is over 300 per cent. Excluding the Southern States, the range is nearly 100 per cent.

The agricultural products of these states are dominantly international goods; there is competition between the states, as well as with foreign sources of supply. The geographical drift of farm prices, however, is on the whole just the reverse of that of wages and of the value set for board; prices of farm products, in the main relatively low in the West, usually ascend towards the

6. For detailed statistics, see *Agriculture Yearbook*, 1930, p. 1000.

North Atlantic seaboard. Somewhat the same situation as to wages and farm prices appears in Canada.

Historical and social factors, jointly with differences in the effectiveness of labor, no doubt account for the wage disparity in the North and South, since in the latter negro labor predominates. Nevertheless, the inequalities in the Southern States themselves are not small. It is particularly noteworthy that in the surplus grain-producing areas — Montana, North and South Dakota, Kansas — which for a decade have been in sore financial straits, farm wages are as high and even much higher than in relatively prosperous states of diversified farming such as Ohio, Indiana, Illinois.

I make no pretense of adequately accounting for these differentials. Labor productivity must be qualified in some way by a geographical factor, in view of the graduated rise of wages east to west, as well as south to north. The tide of settlement in North America flowed westward, and soils were progressively depleted by the earlier methods of farming. Adequacy of the supply of labor plays a part, for the position of the farm laborer is manifestly stronger where such labor is relatively scarce, as in the Far West, in the industrial regions of New England, and in Florida (relative to Georgia). Yet such considerations, obviously, do not account for the gradation in the scale of wages; it is hardly likely that the productivity of labor should rise, gradatim, in the manner described. For the same reason, differences arising from the relative use of labor-saving equipment and scale of operation do not adequately explain the situation. Moreover, in a money economy the effectiveness of labor is not to be measured by the output per worker. Output is qualified by the regional differences in price, supported in part by differences in grade or quality that are often the result of soil or climate.

V

We conclude that, for the great bulk of the domestic merchandise, price influences transcend political boundaries; they lie in the main beyond the control of any one nation. Yet in a number of grave politico-economic problems, national policy and often theoretical exposition is informed by the contrary notion — that domestic price levels in the main dominate the field of industry and can be secured by legislation. These practical applications I propose to consider next.

The legislative programs for agricultural relief commonly propose, as their major objective, the establishment of a "domestic" price level for farm products — dominantly international goods. In their more crude form these programs run in the terms that American agriculture must be placed upon a domestic basis, a scale determined by American prices and standards of consumption. It must be freed of dependence upon foreign markets, the demands of which were a primary factor in the antecedent great expansion of agricultural production. "To protect domestic markets against world prices," "To eliminate as far as possible the effect of world prices upon the prices of the entire domestic production by providing for the disposition of the domestic surplus of such commodities," these are typical provisions of farm relief bills which barely escaped enactment. Other bills contain a somewhat naive preamble putting the proposed legislation into effect whenever it is found that domestic prices of agricultural products are affected by foreign prices. Such concepts as these, which it is superfluous further to discuss, underlie much of the discussion.

Another part of the relief program makes the just demand of tariff equality for agriculture. A mechanism must be devised for making the tariff "effective," even

on products that are upon an export basis. Yet obviously if it were possible to raise prices all around to an equal degree, no industry would profit. All that could be achieved would be an increase in the number of units of domestic currency — the number of counters — for which goods are exchanged.

Similar purposes are expressed in enacted legislation, notably the Federal Farm Board Act. According to official spokesmen, or at least according to statements made when the work of administration was first undertaken, a major purpose of this Act is to "stabilize" prices, to reduce price fluctuations through "Stabilization Corporations" and other ways. Yet, so long as manufacturing consumers, traders, brokers, and the like are free to operate, prices in domestic markets can scarcely fail to respond to the broad swings in foreign markets. Only by an extensive and thoroughgoing system of control, not likely to be tolerated by western nations except under the stress of wartime conditions, can such objectives be attained; and their attainment is of dubious advantage.

A legislative illustration of unusual interest is afforded by the Webb-Pomerene Act. Exempting associations "actually engaged solely in export trade" from the Sherman Anti-Trust Law, this Act at the same time attempts to safeguard the public interest by several limitations; they may not "artificially or intentionally enhance or depress prices within the United States," nor "substantially lessen competition within the United States or otherwise restrain trade therein." These are limitations which, if strictly enforced, almost nullify the Act. It seems rather obvious that, under a competitive regime, staple or standard goods are not likely to be sold abroad at a price much different from that in the United States; moreover, the practice of dumping is

visited with severe penalties by many countries. When Copper Exporters, Inc., established an export price of $10\frac{1}{4}$ cents per pound, *ipso facto* a domestic price of about 10 cents was fixed.

According to the reports of the Federal Trade Commission, the law has not been amended, has been involved in no judicial procedure respecting construction, and no formal complaints or orders were issued by the Commission. However, in an interesting article describing the operation of the law, Notz describes an informal ruling of the Commission that the associations need not actually export; they are allowed merely to fix prices and allocate orders. Webb associations may also become parties to international cartels. Hitherto the large corporations, with organized foreign trade organizations, had been slow to avail themselves of such associations; indeed the legislation was initially designed mainly to aid the small exporters. "The associations subsequently formed were for the greater part essentially price-fixing and not selling combines, . . ."⁷ They fix minimum prices, spheres of influence, and the like, the selling and exporting being done by individual members. Total exports by all such associations rose from 4.3 per cent of the national total in 1926 to 14.0 in 1929. Since the shipments consist largely of industrial raw materials and manufactures, the proportion for these two classes must be substantially larger than 14 per cent.

These are developments of unusual interest. Unquestionably there is much to be said in favor of some such legislation as the Webb Act; and it appears to have been of substantial aid to exporters.⁸ Yet industry will ordi-

7. William Notz, "Ten Years Operation of the Webb Law," *American Economic Review*, March 1929, xix, 16.

8. It is not entirely just to say that the United States sanctions practices abroad that are prohibited at home. Many countries actually encourage consortiums for both the domestic and foreign trade; and American associations seem necessary to meet the situation.

narily move as far as it can in the maintenance of prices and restriction of competition. The trend of events is one well meriting careful consideration: in the domestic field, the growth of mergers and combinations, the evasion of the anti-trust laws by means of intra-state agreements, the expansion of coöperative marketing in agriculture, the devices of manufacturers to control distribution and retail prices; in the export field, the Webb associations; and in imports, foreign cartels and spheres of influence, valorization, and price control of many kinds.⁹

Turning from farm relief and export associations, the same type of confusion is to be encountered in the treatment of trade and monetary problems, and in suggested palliatives for the present economic crisis. Here one encounters the pervasive notion of substantially independent domestic price levels for merchandise, susceptible of control or stabilization through the national credit policies. When imports or exports are small, relative to domestic production, the conditions of international trade are supposed to exert little direct influence. As explained before, the foreign quotations establish the upper and lower limits within which domestic prices at wholesale may oscillate. They influence prices, profits, and ultimately output. An excess in the one direction draws imports; in the other, it attracts exports; between the two there is an intermediate zone wherein fluctuations in the daily quotations, as well as in ocean freights and the like, offer dealers some opportunities for profitable trade.

The steady and world-wide advance in the height and inclusiveness of the tariff barriers is not merely a consequence of the wave of nationalism following the World

9. A bill extending the scope of the Webb Act to similar associations for the import trade failed of enactment.

War. It reflects the extension, particularly marked in the past decade, in the scope of international goods, and collaterally, the sharper impact of foreign competition. Moreover, in an era of high tariffs and of organizations able and eager to realize the contemplated price increases, the industry which does not secure its share is at a serious disadvantage.

VI

The preceding sections have dealt with the concept of international and domestic commerce, the content of the two categories, the various factors which make for regional price equalization, and the causes of deviation. Something has also been ventured in the way of practical application to a number of the politico-economic problems of the day. What of the superstructure of international trade theory which rests upon contrary assumptions — in particular, upon the assumed predominance of the domestic category and of substantially independent national price levels? Two or three of the more obvious theoretical implications may here be briefly indicated.

The suggested reformulation is not necessarily antagonistic to the specie-price theory, nor of course to the underlying quantity theory. The international balances are mainly settled through the movement of merchandise. Therefore an extension in the scope of international goods seems, upon cursory examination, to supplement the familiar analysis. The equalizing effects of the exchange premiums and discounts and of the specie flows are applied directly to the bulk of the national merchandise, rather than to a small part of it.

Nevertheless, if in the modern nations the specie prices of wholesale merchandise are structurally related — if gold prices of most merchandise are the same the

world over, save for costs of movement — it is not easy to envisage the processes described in the orthodox theory. In the characteristic position — nations upon a gold standard, rates of exchange ranging between the specie points — these variations would hardly amount to more than $\frac{1}{4}$ to $\frac{1}{2}$ of 1 per cent of the value of merchandise. On an annual trade of 1,000 million dollars, exchange would normally not materially exceed 5 million. To it, however, should be added slight corresponding changes in the cost of movement. Apart from such considerations, the added profit or loss arising from exchange premiums and discounts tends to disappear in the competition of the producers and traders of a nation. When a nation's currency is at a discount, or when it is upon a paper basis, the process of inflation (in terms of the national currency) quickly extends to all international merchandise, both export and import.¹ Uniformity in wholesale prices thus implies a corresponding uniformity in the relative value, or ratio of exchange, of the international commodities produced by the different nations.

The underlying influence is, of course, the movement of specie rather than the variations in foreign exchange. Can the movement of specie alter the relative national gold prices of international merchandise? It may be

1. When the Argentine peso depreciates, the quotations, in terms of the national currency, for goods of the import type (whether produced at home or imported) tend to advance proportionately. Obviously the foreign seller will not accept a lower net price, for delivery in the Argentine, than is obtainable at home or in other countries. In like manner, Argentine quotations for grain, wool, and other exports tend to advance. Competing British buyers will not be able to maintain a different net price for home-grown, Australian, and Argentine grain and wool of comparable quality. Maladjustments do develop in the progress to a new par of exchange, of course. The stimulus to export, and the tendency to equalize the balance of international indebtedness, arises mainly from the lag in the price or cost of local goods — labor, services, transportation, taxes, etc.

urged that regional prices of merchandise nevertheless do deviate. Yet these deviations are the result of market processes and flows already described, peculiar to the various commodities, slightly, if at all, connected with the movement of specie. For the purposes of theory, it seems sufficient that gold prices tend towards uniformity, and that this tendency is being brought to increasing realization by the steady advances in industry and in the marketing processes. To alter the regional price ratios necessitates something more than an expansion or contraction in production, imports, or exports. The balance of trade will of course be affected by an increase in exports, of commodities already upon an export basis, or by a rise in imports, of commodities already upon an import basis. To alter the price map, however, a region must move from the export to the import point, or vice versa. Excepting seasonal crops, such shifts are usually slow to develop, and they imply a profound change in the comparative advantage of the producing sections.

A fairly obvious mode of reconciliation suggests itself, through some change in the causal sequence, and a lessening in the distinction between international and domestic processes of adjustment. That is to say, the processes of inflation and deflation may work upon the important class of local commodities — labor, services, rents, taxes, retail prices, and the like — and through these alter domestic supply prices, as well as the volume of imports and exports, without changing the relative gold prices at wholesale of international goods. In this way a sustained influx of specie may effect an expansion in credit, in expenditures for plant and construction, for capital and producers' goods; it may likewise stimulate the demand for labor and services, and raise the standards of expenditure. These processes may easily alter the trade balances without changing relative prices of

merchandise. The objection that movements in wholesale prices generally precede, rather than follow, changes in the price of labor and services does not appear to be a serious one.

Lastly, the internationalization of the primary or wholesale prices has an obvious and direct bearing upon monetary and banking problems. Manifestly, this concept is not in accord with the notion that the movement of commodity prices (national) lies within the control of the central banks — that the discount or credit policies of a given nation may control or stabilize its domestic price level. If the price impulses transcend the political boundaries, there is nothing mysterious in the irresponsiveness of gold price to the credit policies of a country, nor in the phenomenon of falling prices in the face of an influx of gold from abroad. Save for the local commodities, price control would appear almost incontrovertibly to be international in scope.

The present paper makes no pretense to a comprehensive exposition of either the mass of relevant factual detail or of the diverse theoretical and practical applications. What has here been ventured is only a by-product of somewhat specialized research in tariff problems and in particular industries. I have merely attempted to break ground for further work in this field, by indicating the vagueness and inaccuracies in certain aspects of the usual exposition, and by suggesting the direction that a reformulation of this exposition might take.

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THE COMPARATIVE FERTILITY OF THE NATIVE AND THE FOREIGN-BORN WOMEN IN NEW YORK, INDIANA, AND MICHIGAN

SUMMARY

Introduction, 460. — Birth registration introduced after 1850 but generally unsuccessful in the United States, 460. — Census and registration returns in New York, 465. — Birth registration in Indiana, 470. — Census and birth registration returns in Michigan, 472. — Conclusions, 482.

PRIOR to the establishment of the United States Birth Registration Area very little material was collected on the comparative fertility of the native-born and of the foreign-born women living in the United States. Such data as were obtained dealt primarily with the New England states.¹ To date the data existing in the records of New York, Indiana, and Michigan have not been analyzed. In this paper, therefore, we shall sketch briefly the development of birth registration and then present in summary form the data on comparative fertility in New York, Indiana, and Michigan.

I

Annual reports of births registered were published prior to 1860 in Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Kentucky, South Carolina and Virginia. These reports were discontinued in Kentucky, South Carolina, and Virginia just before the Civil

1. The writer has dealt with the New England data in "The Comparative Fecundity of the Native and the Foreign Born Women of New England," Brookings Institution, Washington, 1930 and in "Has the Native Population of New England Been Dying Out?" The Quarterly Journal of Economics, August, 1930.

War. Other states, however, undertook registration of births and by 1900 returns had been published for one or more years in the above mentioned states and in Michigan, Indiana, Maine, New Hampshire, New York, Pennsylvania, Alabama, California and Illinois. Returns had also been published for certain cities such as Boston, Washington, Providence and Philadelphia.² The value of these reports is greatly diminished, however, for our purposes either because so many births escaped registration, or because births were not classified into those of native and those of foreign parentage.

Efforts to establish birth registration were being made about 1850 by Jesse Chickering, Edward Jarvis, W. L. Sutton, and others.³ According to J. S. Billings, twenty-five states had registration laws by 1881, including:⁴ Alabama (1881); California; Connecticut (1848, 1877); Delaware (1862, 1871); Georgia (1875, 1876); Illinois (1877); Indiana (1881); Iowa (1880); Kentucky (1851, 1878); Louisiana; Maine; Maryland; Massachusetts (1844, 1849, 1880); Michigan (1869); Minnesota (1870);

2. L. I. Dublin so late as 1916 found urban registration to be incomplete in light of three tests: (a) too few births as compared with number of children under one year of age; (b) undue fluctuation in annual crude birth rates; (c) the observed crude birth rates fell below reasonable minimum rates. (See Publications of the American Statistical Association, Vol. 15, 1916-17, pp. 533-47.)

3. See Sutton, W. L. "Uniform Plan for Registration Reports of Births, Marriages, and Deaths." Transactions of the American Medical Association, Vol. 12, 1859, pp. 135-176; Jarvis, Edward, "Report on Registration of Births, Marriages, and Deaths," *ibid.*, Vol. 11, 1858, pp. 527-535.

4. Years when laws became effective or were amended are given in parenthesis. See Billings, J. S., "The Registration of Vital Statistics," Appendix E, Fourth Report of the National Board of Health, 1882, pp. 355-461, for the texts and the contents of these laws. The methods of reporting births are summarised on pp. 368-69. See also Howard, C. O., "Custodians of Public Records and State Registration of Vital Statistics," issued in manuscript form by the Bureau of Pensions, Department of Interior; the late information is complete to 1924 but that dealing with early records is not complete.

New Hampshire (1858); New Jersey (1848, 1851, 1862, 1877, 1879); New York (1847, 1880, 1881); North Carolina (1881); Ohio (1880); Pennsylvania (1851); Rhode Island (1844, 1850, 1852); South Carolina (1853, 1856, 1858); Tennessee (1881); Vermont (1856); Virginia (1853, 1855); Wisconsin.

The passage of the above laws did not necessarily lead to registration, however. Actually, according to the report made in 1912 by the Special Committee on Infant Mortality of the British Royal Statistical Society,⁵ births were first registered in states other than New England as follows: California, 1905; Colorado, 1907; Kansas, 1911; Maryland, 1898; Michigan, 1906; Minnesota, 1907; Missouri, 1910; Nebraska, 1904; New Jersey, 1848; New York, 1880; North Dakota, 1907; Ohio, 1908; Texas, 1909, 1911; West Virginia, 1881; Wisconsin, 1907.⁶

A large proportion of births escaped registration even in such states as had registration laws. For instance in South Carolina prior to 1860 only about four-tenths of the births were registered; in Kentucky, about one-half. Omissions were almost equally numerous in Virginia and New Jersey, and later in Alabama, California, Iowa, and Illinois. Failure to secure satisfactory registration led either to its discontinuance, or to frequent but futile revisions of registration laws, or, if continued, to an accumulation of unsatisfactory material.⁷

5. See *Journal of Royal Statistical Society*, Vol. 76, December, 1912, pp. 58-61.

6. To this list must be added Michigan, 1867, Iowa, 1881, Indiana, 1883.

7. See for example, Young, Allyn A., "California Vital Statistics," *Publications of the American Statistical Association*, Vol. 11, 1908-1909, pp. 543 ff.; for resume of birth and death registration in Illinois and Chicago see *Report and Handbook of the Department of Health of Chicago*, for 1911-1919, pp. 1178-1219; see also *Compendium of the Seventh Census*, 1850, pp. 102 ff.

Not even in the present century have all births been registered in states requiring registration of births. This contention may be verified simply by comparing the number of births reported with the number of children reported in the federal census as under one year of age or under five years of age. What percentage of births escaped registration, however, is not precisely determinable for the age returns in the federal census have never been accurate.⁸

Rough approximations occasionally have been made of the number or percentage of births that escaped registration. Thus in Pennsylvania, according to Dr. Samuel G. Dixon, State Commissioner of Health, prior to 1904 "outside of the cities and large burroughs no record was made of the birth or death of a human being."⁹ Nevertheless, by 1908, according to G. B. L. Arner only about 10 per cent of the births were not registered in Pennsylvania; in 1915 only 6.6 per cent escaped registration.¹ Walter Willcox states that in California in 1909-10 only seven-tenths of the births were registered; in 1914, five-

8. See Chapter I in the writer's monograph, *op. cit.*, for consideration of method of determining the degree of accuracy in birth and age returns.

9. See "Law, the Foundation of State Medicine," *American Medical Journal*, June, 1907, p. 1926. The inadequacies of Pennsylvania records are discussed in the *First Annual Report of the Pennsylvania Commissioner of Health*, 1906, pp. 93-95, 176.

1. Arner has computed the approximate number of births per given year by adding the deaths of children born in that year to the total at the corresponding age at the subsequent census. The number actually registered is then compared with this computed approximate number to determine the number of omissions. Arner's method rests upon four assumptions: (a) that there is no net interstate migration of children; (b) that the age of the decedent is correctly reported; (c) that no deaths escape registration; and (d) that the number of children reported in the census as of a given age is accurate. The first three assumptions are practically valid but the fourth is not. The number of children of a given age is usually *understated* in the census returns. Arner's method, therefore, understates the number of omissions. (See "The Correction of Birth Totals for Incomplete Registration," *Pennsylvania Department of Health, Vital Statistical Bulletin*, January, 1930, pp. 10 ff.)

sixths.² So late as 1912 the number of births escaping registration was estimated by the registrars of respective states to be as follows³: California, "incomplete, especially in sparsely settled parts"; Iowa, "by no means accurate"; Maryland, 40 per cent; Michigan, "not many"; Minnesota, "some births"; Missouri, less than 10 per cent; Montana, none; Nebraska, "some"; New Jersey, 0-20 per cent; New York, 0-10 per cent; North Dakota, 25 per cent; Ohio, 0-20 per cent; Texas, 45 per cent; West Virginia, 10 per cent; Wisconsin, 10 per cent.

The establishment in 1915 of the United States Birth Registration Area accelerated the spread of birth registration and brought about an improvement in the completeness of the returns. Within a decade the original area including ten states expanded to an area including three-fourths of the population. To be admitted to this area at least 90 per cent of the births occurring in a state had to be registered. It is probable, therefore, that registration in this country will shortly be on a parity with registration in the leading countries of Europe.⁴

This brief survey of birth registration in the United States makes it apparent that outside of New England our information on the comparative fertility of native and foreign-born women is relatively scarce. Consequently such data as are obtainable from the records of

2. See "Some Population Statistics of the Pacific Coast States," Publications of the American Statistical Association, Vol. 14, 1914-1915.

3. See Journal of Royal Statistical Society, Vol. 76, December, 1912, pp. 58-61.

4. It is questionable whether any state ought to be admitted to or retained in the registration area provided it has not been *carefully* determined that not more than 10 per cent of the births escape registration. Careless procedure in this regard tends to make birth statistics appear more accurate than they are and thus fosters invalid conclusions relative to the future size of the American population. (See Kuczynski, Robert R., "The Balance of Births and Deaths," Vol. 2, Brookings Institution, Washington, D. C., to appear in the near future.) With the admission of South Dakota in 1930 Texas remains the only state outside the Registration Areas for both births and deaths.

New York, Indiana, and Michigan possess scarcity value. These data will be presented in the following sections.

II. NEW YORK

The first inquiry into the comparative fertility of native and foreign-born women to be made in the United States was conducted in the State Census of New York in 1865. The instructions to the enumerators read in part: "The object of the inquiry is to obtain data for determining the natural increase of the population in this state among the various classes."⁵ All children born living, whether alive or dead, present or absent from the family, were to be reported. Inquiry as to children was to be made "only of adult females, and usually of wives or widows."

Women reported as married or having been married numbered 842,562, of whom 520,250 were native and 322,312 foreign. If we may assume this number to include all widows and married women then 66.3 per cent of the females, aged 15 and over, were or had been married.⁶ According to the Census of 1920 the corresponding percentage was 69.1.⁷

Of the native married or widowed females, 14.3 per cent were childless as contrasted with 12.7 per cent of the foreign-born women.⁸ Native mothers had borne

5. See New York State Census of 1865, p. lxxvii.

6. Females aged 15 and over numbered 1,270,220 (op. cit., pp. 17, 66-68). Possibly some married women were not reported as such for if we add the 137,890 widows to one-half the 1,433,864 persons listed as living in the married state the total number of married females was $\frac{137,890 + 1,433,864}{2} = 854,912$.

7. Calculated from Fourteenth Census, Vol. II, p. 440.

8. Calculated from op. cit., p. lxxvii. In Massachusetts in 1875 of the native women who were or had been married 25.2 per cent were childless; of the foreign-born women, 17.3 per cent. In 1885 these respective percentages were 20.18 and 13.27 in Massachusetts and 19.6

1,857,151 children; foreign-born mothers, 1,230,764. Native women, married or widowed, averaged 3.57 children; foreign-born, 3.82. Native mothers averaged 4.14 children; foreign-born, 4.22.⁹ Of the native mothers 23.5 per cent had borne 1 to 3 children; 32.7 per cent, 4 to 6; 30.5 per cent, 7 to 10; 13.3 per cent, 11 or more. The corresponding percentages for foreign-born mothers were 21, 37.2, 31.9 and 9.9.

The smallness of the margin of difference between the average number of children per native mother and that per foreign-born mother is probable due to the fact that by 1865 a smaller proportion of foreign-born mothers had completed the child bearing period than was true of native mothers. The foreign population of New York increased from 397,574 in 1845 to 920,293 in 1865.¹ Since only about 10 per cent of the immigrants² coming to New York at this time were over 40 years old, it is unlikely that the average age of the foreign women who were married or widowed was as great as that of the native women.

As a result of analysis of the above data Franklin B. Hough, compiler of the 1865 census, concluded "that there is at the present time no natural increase in the population among families descended from the early settlers of the state."³ The data do not permit a precise

and 12.9 in Rhode Island. (Calculated from *Compendium of Massachusetts Census of 1875*, p. 53, *Massachusetts Census of 1885*, Vol. I, Part 2, pp. ciii, 1169, 1173; *Rhode Island Census, 1885*, p. 345.)

9. Calculated from *op. cit.*, p. lxvii. In Massachusetts in 1875 native women who were or had been married averaged 2.63 children; foreign-born, 4.06. Native mothers averaged 3.52; foreign-born, 4.91.

1. In 1860 there were 1,001,280 foreigners in New York; westward migration apparently accounts for the decrease between 1860 and 1865.

2. But 10.4 per cent of the passengers arriving in the United States, 1845-1860, and stating their age were over 40 years old. (Calculated from Ferenzi, Imre, "International Migrations," Vol. I, p. 397, 1929, New York.)

3. See Allen, Nathan, "Changes in Population," *Harper's Magazine*, Vol. 38, 1868, p. 388.

evaluation of this statement. According to the calculations of Dublin and Lotka, with the 1920 age schedule of maternity frequency and the 1920 life table, to maintain a stationary population every married woman must have on the average 2.62 children, and every fertile married woman, 3.15 children.⁴

Unfortunately the lack of continuous and adequate material makes it impossible to trace the convergence of native and foreign fertility which has taken place in New York. It is evident, however, that in New York as well as in Michigan and possibly in Indiana the difference between native and foreign fertility has been gradually disappearing. Today in these three states the fertility of the foreign-born women exceeds that of the native chiefly because a larger proportion of the former are living in the married state.⁵

4. See "On The True Rate of Natural Increase," *Journal of the American Statistical Association*, Vol. 20, 1925, pp. 325-27. P. K. Whelpton, using the Dublin-Lotka formula, finds that on the basis of the fertility of 1920 the native white population of Connecticut, Massachusetts and New York is dying out. The increase among the foreign-born whites was sufficient in 1920, however, to counterbalance this decrease among the native whites. (See "Differentials in True Natural Increase," same journal, September, 1929, p. 238.) But by 1928 the white population in these states was dying out while that in Indiana showed a slight but declining increase. (See "Population," *The American Journal of Sociology*, Vol. 35, 1930, p. 872.) Robert R. Kuczynski's calculations show that in 1919-1920 the whites in New York were just replacing themselves; those in Indiana revealed a slight increase while those in Michigan indicate an increase slightly in excess of the average increase then prevailing in the 20 states for which rates are given. (See Vol. 2, *Encyclopaedia of the Social Sciences*, p. 571; see also Vol. II, "The Balance of Births and Deaths.")

5. The term "native," as used in this article, includes all who were born in this country whether or not their parents were native or foreign born. Consequently the complexion of the "native" element is changing from year to year, for each year there is added to the category "native" the children born in this country to foreign-born parents. In recent decades the proportion of the native element descended from European stocks with the highest fertility has steadily increased. (See the writer's "The Merits and Demerits of the National Origins Provisions for Selecting Immigrants," *The Southwestern Political and Social Science Quarterly*, Vol. 10, 1929, Tables III and IV.) Hence, since the

Thus, if we designate as a general fertility rate the number of children born annually to 1000 women aged 15 to 49 years and as a special fertility rate the number of legitimate children born per year to 1000 married women aged 15 to 44 years,⁶ we find that, while the foreign general fertility rate usually exceeds the corresponding native rate, the foreign special fertility rate is not very much greater than the native special fertility rate.⁷ The special fertility rates for white women in New York, Indiana, and Michigan are given in Table I.

native-born children of foreign parentage average more children per family than do native-born children of native parentage, an increase in the proportion of natives of foreign parentage in the native population will tend to make the fertility of the native population higher than it would have been had there been no infiltration of immigrant stock. This infiltration of foreign stocks into the native population explains in part why native fertility has declined so little in New England in the past 50 years. (See writer's monograph, *op. cit.*, pp. 40-41.) This infiltration also explains, in part at least, why native fertility has declined so slowly in New York, Indiana, and Michigan and hence the convergence of native and foreign fertility. The restriction of immigration coupled with the Americanization of the recently arrived stocks will, therefore, accelerate somewhat the decline in fertility among the "native" element.

In the following table we give the percentages of natives and the percentages of native women who had one or both parents foreign born in certain years.

State	Percentage of Natives with One or Both Parents Foreign Born			Percentage of Native Females with One or Both Parents Foreign Born	
	1870	1900	1920	1900	1920
New York	33.5	46	50	46	51
Indiana	13	16	14	16	14
Michigan	24	45	42	45	41
Three states combined .	26	38	41	39	41

Calculated from Ninth Census of the United States, 1870, Vol. I, p. 299; Fourteenth Census of the United States, 1920, Vol. III, pp. 282, 474, 676. A few negroes were included in the figure from which the 1870 percentages are derived.

6. An age group for married women including those aged 15 to 49 years is not derivable from the census returns.

7. At times the age composition of the foreign females is slightly more favorable, in that a larger percentage of foreign females aged 15 to 49 are aged 20 to 39 than is true of native women. Women aged 20 to 39 bear about nine-tenths of all children born. In 1920 in New York of

In New York the foreign general fertility rate for 1919-1921 exceeds the corresponding native rate by 70 per cent; in Indiana the foreign exceeds the native by 56 per cent; in Michigan by 38 per cent. Turning to the special fertility rates we find that in 1922 in New York the foreign special fertility rate exceeded the native by only 14 per cent; in Indiana by only 8 per cent; in Michigan the two rates were practically identical. In short, foreign fertility exceeds native fertility chiefly because a larger percentage of foreign women are married.⁸ It is evident, therefore, that among foreign married women voluntary restriction of births is nearly as common as among native married women. If the marital composition of the native and the foreign-born female population were identical, their general fertility rates would be each 100 native women aged 15 to 49, 61 were aged 20 to 39; of each 100 foreign-born women, 66; in Indiana the corresponding percentages were 60 and 58; in Michigan, 62 and 64. (Calculated from the Fourteenth Census, 1920, Vol. II, pp. 213, 229, 249.)

GENERAL AND SPECIAL FERTILITY RATES, BY NATIVITY, 1919-1922*

TABLE I

State	General Fertility Rate		Special Fertility Rate					
	1919-1921		1922		1921		1920	
	Native	Foreign	Native	Foreign	Native	Foreign	Native	Foreign
New York ..	66	112	142.1	161.4	147.8	172.5	145.6	173.5
Indiana . . .	84	131	145.5	157.2	155.9	176.5	149.4	175.0
Michigan ..	92	127	154.2	154.7	167.4	174.6	165.0	177.0

* The special fertility rates are given in Reports for the United States Registration Area, Vol. VII, p. 16; Vol. VIII, p. 16. General Fertility rates are calculated from same Reports, Table 3, Vols. V-VII and from Fourteenth Census, Vol. II, pp. 213, 229, 249.

8. In 1920 in New York, of each 100 native women aged 15 to 44, 49 were married; of each 100 foreign-born women, 64; in Indiana the corresponding percentages were 62 and 83; in Michigan, 61 and 82. (Calculated from Fourteenth Census, Vol. II, pp. 213, 229, 249, 422, 430, and 440.)

nearly the same.⁹ In light of this situation and especially in light of immigration restriction, interest in the comparative fertility of native and foreign-born women is likely to subside.

III. INDIANA

The only material on comparative fertility in Indiana prior to the World War is to be found in the state registration records published since 1883. Births to white mothers were classified into those of native, those of foreign, and those of unknown maternity. Because of the indifference and ignorance of physicians, midwives, and the people of the state many births escaped registration.¹ Often, too, the number of births classified as of "unknown maternity"² exceeded the number classified as of foreign maternity. Hence any error in the distribution of the births of unknown maternity is liable to alter greatly the absolute number of births classified as of foreign maternity.³

9. This conclusion is true of New England, as we have shown in our monograph, *op. cit.*, and apparently of the United States Birth Registration area. In the latter area, in 1922, the last year for which these rates are given, the native special fertility rate was 155, the foreign, 159. The foreign rate was only 3.2 per cent greater than the native rate. (See Reports, Vol. VIII, p. 16.)

1. Concerning the inaccuracy of Indiana's birth statistics see the Public Health Report for 1887, p. 205, and the Twenty-Second Annual Report of the State Board of Health for 1908, pp. 99, 100. White births registered in the period 1886-1890 numbered 176,524; in 1896-1890, 168,741; in 1906-1910, 259,134. Native white children under five years of age numbered 249,027 in 1890; 269,406 in 1900; 269,747 in 1910. It is apparent, therefore, even when allowance is not made for those born and dying within the designated five-year periods, that a large percentage of births escaped registration.

2. From 1886 to 1890 births of unknown maternity were 0.53 as numerous as births of foreign maternity; during the period 1896 to 1900 births of unknown maternity were 1.6 times as numerous as those of foreign maternity; in 1906-1910, the former were only 0.178 as numerous as the latter. Births of unknown maternity comprised 3.7 per cent of the total registered in 1886-1890; 8.7 per cent in 1896-1900, and only one per cent in 1906-1910.

3. Births of unknown maternity are divided in the same proportion as

The average annual number of births per 1000 females, aged 15 to 49 years, in Indiana, were as follows during certain representative periods.⁴

Year	Native	Foreign
1883	74	104
1890	62	66
1900	61	71
1910	80	111
1919-1921	84	131

The wide fluctuation in the above rates indicates the incompleteness of the birth returns from which they are taken, and hence the uncertainty that attaches to such conclusions as we may derive. According to these rates native fertility has increased 14 per cent; foreign, 26 per cent. However, making allowance for the incompleteness of returns prior to the World War, it is more likely that a decrease has taken place in actual fertility. The data seem to show that small families had become more frequent by 1915. Of the mothers who bore a child in 1883, 62.8 per cent had borne 1-3 children; 25.5 per cent had borne 4-6 children; and 11.7 per cent, 7 or more children. In 1903 the corresponding percentages were 64.9, 24.7 and 10.4; in 1915, 66.4 23.7; and 9.9.

Whether, as in New England, native fertility in Indiana has declined less rapidly than foreign fertility is not clear. In 1883 the native rate was 71 per cent as high as the foreign; in 1910, 72 per cent; in 1919-1921, 64 per cent. However, the relatively slower decline in for-births of known maternity. Thus, if 80 per cent of the births of known maternity were to native mothers, then 80 per cent of the births of unknown maternity are added to the births of native maternity to give the total number of births of native maternity.

4. Rates for 1883-1910 are derived from the federal census returns of women aged 15 to 49 and from the Indiana birth registration reports of designated years. The number of females aged 15 to 49 in 1883 is based upon the assumption of an arithmetical increase in both the native and the foreign-born population from 1880 to 1890. See Table I for rates for 1919-1921.

eign fertility indicated by these percentages may really be due to the fact that the registration of births of foreign maternity has improved in a greater degree than the registration of births of native maternity. One can conclude from the comparative native and foreign fertility rates in Indiana that during all the years for which we have data foreign fertility has exceeded native fertility. Today, however, as we have indicated, foreign-born women continue to maintain this superior fertility chiefly because of their more favorable marital composition.

When allowance is made for the incompleteness of the registration returns it is probable that in Indiana native women have borne enough children to permit some natural increase. For, so late as 1920, according to P. K. Whelpton, there was a true natural increase.⁵ It is doubtful, however, whether the native population of Indiana is continuing to replace itself at present. At best only an infinitesimal increase is taking place.⁶

IV. MICHIGAN

Extensive and variegated data relative to comparative fertility are to be found in the registration reports and the state census returns of Michigan. Births have been registered and reports published in this state since April 5, 1867. However, as the registration law allowed as many as 24 months to elapse between the occurrence of a birth and its reporting to a recorder by a member

5. See "Population," *The American Journal of Sociology*, Vol. 35, 1930, p. 872. We have shown elsewhere that apparently the natives of Massachusetts, Rhode Island, and Connecticut were dying out after the Civil War. (See *Quarterly Journal of Economics*, August, 1930.) That natives excluding Catholics were restricting births was contended in 1885 by Dr. J. E. Lockbridge who condemned the "importunate desire . . . to thwart reproduction or disturb gestation." See *Fourth Annual Report of the Indiana State Board of Health*, 1885, p. 190.

6. See Whelpton, *op. cit.*, p. 872.

of the household, a large percentage of births escaped registration until the birth registration law was amended in 1906.⁷ The compiler of the annual report estimated that prior to 1870 only one-half the births were registered, in 1871 about 70 per cent, and as late as 1892 only about 60 per cent.⁸ If the number of native-born children under 5 years of age, as reported in the federal census, is increased by adding the approximate number who were born and died during the 60 months preceding the census, and then divided into the births reported during these 60 months it appears that during 1875-1880 about 35 per cent of the births escaped registration; 1885-1890, 18 per cent; 1895-1900, 24 per cent; 1905-1910, 10 per cent.⁹

Whether more births of foreign than of native maternity escaped registration is hard to determine. One can, however, compare the birth returns of the state census with those of the birth registration reports. For the twelve months ending May 31, 1884, census enumerators reported 30,738 births of native and 23,037 of foreign maternity. During this same period 22,914 births to native and 16,728 to foreign-born mothers were registered. Accordingly, during this 12 month period births registered as of native maternity were only 74.5 per cent of the number reported by census enumerators as of native maternity; the corresponding percentage for births to foreign mothers was 72.6. If we assume that

7. For description of the system of birth and death registration in Michigan see Fifth Registration Report, 1871, p. 3 and Twenty-Fifth Registration Report, 1891, p. vii.

8. See Fifth Report, 1871, pp. 3-5; Twenty-Sixth Report, 1892, p. 3.

9. During the period 1887-1891 about 30,000 fictitious births were registered in Detroit; consequently, after 1891, births were collected by the Municipal Board of Health. (See Twenty-Sixth Report, 1892, pp. 5-8.) Registration improved after the new registration law became effective in 1906, but some births escaped registration as late as 1913. (See Monograph I on Birth Registration, Children's Bureau, Washington, 1913, p. 6.)

the census enumerators reported births of foreign maternity as fully as births of native maternity, it follows that during the year ending May 31, 1884, births to foreign-born mothers were registered only .974¹ as fully as births to native mothers. Using the same method for the year ending May 31, 1894, we find that births to foreign-born mothers were registered 1.092 as fully as births to native mothers.² Hence by 1894 fewer births escaped registration among foreign than among native mothers. This conclusion finds further support in the fact that when the new registration law became effective in 1906 births to native mothers were 34 per cent greater in 1906-1907 than in 1904-1905; foreign births, on the contrary, were only 7 per cent greater in 1906-1907 than in 1904-1905. Admitting that relatively fewer births to foreign-born mothers escaped registration than births to native mothers, the difference is far too slight to explain the superiority of the foreign to the native general fertility rate. In Table II are presented general fertility rates for representative three year periods.

TABLE II. BIRTHS PER 1000 WOMEN, AGED 15 TO 49,
BY NATIVITY IN MICHIGAN, 1869-1921*

Years	State	Native	Foreign	Years	State	Native	Foreign
1869-71	92	77	130	1893-95	82	65	120
1879-81	87	72	125	1899-01	70	56	109
1883-85	90	73	128	1909-11	90	81	122
1889-91	97	75	150	1919-21	100	92	127

* Rates for 1919-1921 are for white women only. Native and foreign colored births are included in other years. Foreign colored females are included with foreign white females in the censuses of 1870, 1884, 1894, 1900; for 1880, 1890, and 1910 ten per cent of colored females, aged 15 to 49, are considered to be foreign born. The inclusion of foreign colored does not affect fertility rates as less than one per cent of foreign born were colored. Births are from Michigan Registration Reports except 1919-1921 for which see Table I. Females aged 15 to 49 are calculated from Ninth Census, 1870, Vol. II, pp. 580-602; Tenth Census, 1880, Vol. I, p. 594; Eleventh Census, 1890, Part II, p. 46; Twelfth Census, 1900, Vol. II, Part II, p. 52; Thirteenth Census, 1910, Vol. II, p. 926; State Census of Michigan, 1884, Vol. I, p. clxvii; 1894, pp. 114-115, 118-119.

1. $72.6 \div 74.5$.

2. This improvement is probably due to the fact that in Detroit, where a relatively larger proportion of foreigners lived, births were collected after 1891 by the Municipal Board of Health. For birth returns in the census see Michigan State Census, 1884, Vol. I, p. clxv; 1894, Vol. I, p. 729. For the year ending May 31, 1894, census enumerators

The fertility rates in Table II reveal four things. First, foreign fertility has always exceeded native fertility. Second, if we allow for births that escaped registration, foreign fertility has declined appreciably and native fertility has declined somewhat.³ Third, the fertility rates of the native and of the foreign-born females seem to be converging. In 1869-1871 foreign fertility was 69 per cent higher than native fertility; by 1919-1921 it was only 38 per cent higher. The present superiority of foreign fertility is, as we have indicated, due to the fact that a larger percentage of foreign females are married. Fourth, when allowance is made for the births that escaped registration, it is evident that the native women of Michigan have been bearing enough children to permit an appreciable natural increase in the native stock.⁴

Further analysis of comparative fertility in Michigan is made possible by the returns in the censuses of 1884 and 1894. In Table III we give the number of children born in Michigan to mothers of a given age who had borne children in the years ending May 31, 1884, and May 31, 1894, and corresponding averages for the United States Registration Area in 1925.

reported 34,117 births of native maternity and 25,772 of foreign maternity. During the same period 25,445 births of native maternity were registered; of foreign maternity, 21,004. It is contended, although on questionable grounds, that in 1884 census enumerators reported only 86 per cent of the births that took place. See Michigan State Census, 1884, Vol. I, p. xliiii.

3. On the basis of the births returned in the state census (1884, Vol. I, p. clxv; 1894, Vol. I, p. 729) native fertility declined from 98 in 1884 to 87 in 1894; foreign fertility declined from 164 to 151.

4. Native fertility in Michigan has exceeded native fertility in New England. Mortality in the Michigan population (native and foreign) has been less than that in the New England states for which we have data. See Glover, James W., "United States Life Tables," Washington, 1921.

TABLE III
AVERAGE NUMBER OF CHILDREN EVER BORN TO MOTHERS WHO BORE
CHILDREN IN 1884, 1894, 1925*

Age of Mothers	Michigan				U. S. Registration Area	
	1884		1894		1925	
	Native	Foreign	Native	Foreign	Native	Foreign
Under 20	1.3	1.4	1.2	1.2	1.2	1.3
20-24	2.0	2.0	1.9	2.0	1.9	1.9
25-29	2.9	3.2	2.9	3.2	2.8	2.9
30-34	4.2	4.9	4.1	4.8	4.0	4.4
35-39	5.5	6.2	5.5	6.5	5.5	6.1
40-44	6.8	7.7	7.1	8.4	7.1	7.8
45-49	6.9	8.1	7.4	9.3	8.6	9.2
All ages	3.25	4.16	3.22	4.37	3.0	3.9

* Averages for 1925 from Births, Still Births and Infant Mortality Statistics, Part II, p. 16, United States Census Bureau. Those for 1884 and 1894 are calculated from Census of 1884, Vol. I, pp. clxx ff. and Census of 1894, Vol. I, p. clxviii. Plural births are counted for one in 1884. The 1884 figures are for 55 counties including 64.5 per cent of the native and 54.5 per cent of the foreign population. The 1894 figures are for the entire state.

The averages given in Table III indicate that fertility was greater among the foreign-born than among the native-born women who became mothers in the years 1884, 1894, and 1925. Native mothers under 25 years of age had borne on an average approximately the same number of children as had the foreign-born mothers.⁵ Foreign mothers aged 25 or more years averaged more children than did native mothers. The former, in short, early achieved a superiority which increased as higher age brackets were approached. The averages for 1925 indicate that fertility has declined more among the foreign than among the native mothers. This decline is more marked among the foreign mothers aged under 45 years.⁶

5. A study of 1629 families in Kalamazoo disclosed that in 1872 the average number of children per native family was 3.34; per foreign family, 4.51. Unfortunately, the degree of completion of these families was not ascertained. See Sixth Registration Report, 1872, pp. 57ff. The compiler of annual reports remarked in 1892 that the birth rate was lowest in the oldest settled part of Michigan, in the Lower Peninsula, where presumably the population was most native. See Twenty-Sixth Report, 1892, pp. 1, 37.

6. The number of mothers aged 45 to 49 years is too small to be representative for purposes of comparison.

We have seen that foreign-born women who became mothers averaged more children than native-born mothers. Data obtained in 1894 indicate that a larger proportion of the foreign-born women of productive age became mothers than was true of the native female population. This superior rate of motherhood increases the excess of foreign over native fertility. The figures for 1894 show that in every age group maternity frequency was greater among the foreign-born. The peak in frequency for both native and foreign-born women was reached in the age group 25-29. Thereafter the frequency declined in both classes but the decline was more rapid among the native-born women. In short, the foreign-born women achieved much of their superiority in fertility by continuing to bear children after reaching the age of 30. The number of mothers in each 1000 women of given ages was as follows in 1894:⁷

Age	Native	Foreign	Relative Value of Native Rate if Foreign Rate = 100
15-19	26	31	85
20-24	124	185	67
25-29	145	236	61
30-34	120	213	56
35-39	87	165	53
40-44	40	88	46
45-49	8	18	44
15-49	84	144	58

That part of the superiority of fertility among foreign-born women was, and still is, due to the fact that a large proportion of the foreign-born are married, is made evident by the rates presented in Table IV. These rates likewise indicate that native and foreign fertility is converging. In Table IV we give the number of children for 1000 married women, classified as to age and nativity, in 1894 and 1919-1920.

7. Calculated from Census of 1894, Vol. I, pp. 350-351.

TABLE IV
CHILDREN BORN PER 1000 MARRIED WOMEN BY AGE AND NATIVITY,
MICHIGAN, 1894, 1919-1920*

Age	1919-20			1894		
			Relative Value of Native Rate if Foreign Rate = 100			Relative Value of Native Rate if Foreign Rate = 100
	Native	Foreign		Native	Foreign	
15-19	400	462	87	280	345	81
20-24	280	325	86	258	340	76
25-34	164	211	78	172	266	65
35-44	67	94	71	78	144	54
15-44	159	179	89	160	227	70

* Rates for 1894 calculated from Census of 1894, Vol. I, pp. 350-361. Rates for 1919-1920 calculated from Fourteenth Census, Vol. II, p. 430 and from Reports for United States Birth Registration Area, Vol. V, p. 236, Vol. VI, p. 178.

The rates and ratios given in Table IV reveal four trends or conditions. First, in both 1894 and 1919-1920 fertility was greater among the foreign-born married women within specified age groups than among native married women. Second, if allowance is made for the fact that not all births were enumerated in 1894, it appears that fertility has declined in each age group above 19 among both the native and the foreign-born women⁸. The decline is apparently more marked among women aged over 24 years. Third, the decline has been greater among the foreign than among the native women within any one age group, as is shown by the ratios in columns 4 and 7. In short, fertility among native and foreign married women is converging. Fourth, the fertility rates for married women given in Table IV, if compared

8. Apparently actual fertility was higher in 1919-1920 among both native and foreign-born married women aged 15 to 19 than was true in 1894; for the increase of 43 per cent among the native and of 34 per cent among the foreign is hardly to be explained in terms of completer registration in 1919-1920. Possibly a larger percentage of the marriages of females aged under 20 years were "forced" marriages in 1919-1920 than in 1894; further, of those which were not "forced" probably a larger percentage were among females in the lowest socio-economic strata in 1919-1920. In 1894 of the native married women aged 15 to 44 years, 4.09 per cent were under 20 years of age; of the foreign, 5.53 per cent. In 1920 the corresponding percentages were native, 3.46; foreign, 1.65.

with general fertility rates for corresponding years, indicate that both in 1894 and in 1919-1920 the general fertility rate of the foreign-born women was higher than the corresponding native rate because a larger proportion of the foreign-born women were married. In 1894, of each 1000 native women aged 15 to 44 years 90 became mothers; of each 1000 foreign-born women, 161.⁹ The rate for the native women was only 56 per cent of the rate for the foreign-born women; but the rate for native married women (see Table IV) was 70 per cent of the rate for foreign-born married women. In 1919-1921 the native general fertility rate, 92, was but 72 per cent of the corresponding foreign rate, 127 (see Table II); but the fertility rate for the native married women (see Table IV) was 89 per cent as high as the fertility rate for foreign-born married women. It is apparent, therefore, that since the fertility rates for each age group of native and foreign-born married women are rapidly converging,¹ the general fertility rates for native and foreign-

9. Calculated from Census of 1894, Vol. I, pp. 350-351.

1. See the ratios of native to foreign rates, 1894 to 1919-1920, in Table IV. This convergence is striking if we compare the fertility rates for native and foreign-born married women, aged 15-44 years, 1894-1922 (see Tables I and IV).

Year	Native	Foreign	Ratio of Native to Foreign
1894	160	227	70
1919-1920	159	179	89
1921	167.4	174.6	95
1922	154.2	154.7	100

This convergence is partly due to the fact that the age composition of native married women is now more favorable to fecundity than that of foreign-born married women. In 1920, of each 1000 native married women 35 were aged 15-19 years; 170, 20 to 24 years; 455, 25 to 34 years; and 340, 35 to 44 years. The corresponding proportions for foreign married women were 17, 118, 443, 442. The native age composition as of 1920 is 11 per cent more favorable to fecundity than the corresponding age composition. Hence if the fertility of native married women had been on a parity with that of foreign married women, 1000 native married women aged 15 to 44 years would have averaged 11 per cent more children per year than 1000 foreign-born married women.

born women would be nearly identical if the marital composition of the native female population were identical with that of the foreign-born female population.

It is contended by students of American demography that natives of foreign parentage average fewer children than do the foreign-born but more than do the natives of native parentage.² In Canada, on the contrary, according to Professor W. Burton Hurd, "the birth rate of immigrant peoples normally goes up rather than down in the second and in some cases possibly in the third generation of Canadian residence."³ The Michigan data for 1894 support the former position. In that year⁴ 9.37 per cent of the foreign-born became parents; 4.0 per cent of the natives of foreign parentage; and 3.52 per cent of the natives of native parentage. As the age composition both of the foreign-born and of the natives was more favorable to parenthood than that of the natives of foreign parentage,⁵ one cannot attribute the correspondence of nativity of parentage and the birth rate to age composition.

It has sometimes been contended that the attitude of the mother is more important than that of the father in determining the number of children per family. Data gathered in 1894 do not support this contention. In

2. See Hill, J. A., "Comparative Fecundity of Women of Native and Foreign Parentage," *Publications of the American Statistical Association*, Vol. 13, 1914, pp. 590-597.

3. See "Origin, Birthplace, Nationality and Language of the Canadian People," Ottawa, 1929, p. 216. Professor Hurd explains this trend on the grounds that population pressure is not so great in Canada, that children prove to be assets in rural Canada, and that earnings increase more rapidly than the standard of living. The evidence presented, however, does not convince the writer that children of immigrants do have more children.

4. Calculated from Census of 1894, Vol. I, p. clxi.

5. According to the federal census of 1890, 49.6 per cent of the foreign-born females were aged 20 to 44 years; 35.6 per cent of the native females of native parentage and 29.4 per cent of the native females of foreign parentage.

mixed marriages where the father was foreign born the average number of children per mother was higher than in mixed marriages where the father was American born. However, as the difference in averages is not very great, and as nothing is known of the age composition or of the socio-economic status of either group of native-foreign families, one cannot conclude that the attitude of the father is more important than that of the mother in determining the size of the family. The average number of children per native, per foreign, and per mixed family is given in Table V.

TABLE V
CHILDREN BORN AND LIVING PER MOTHER BY NATIVITY,
MICHIGAN, 1894*

Nativity of Parents	Children per Born	Mother Living	Per Cent Living
Both Foreign.....	5.38	4.11	76.4
Foreign Father, Native Mother.	3.97	3.26	82.1
Native Father, Foreign Mother.	3.83	3.13	81.7
Both Native.....	3.45	2.85	82.6

* Calculated from Census of 1894, Vol. I, pp. clxxii-clxxiv.

In Table VI we give the average number of children born, and living, of women who died in Michigan during the year 1900. These averages lead to conclusions in conformity with those derived from data presented above. The average number of children born per foreign-born decedent is higher in each age group than the corresponding average for native decedents. While a slightly larger percentage of the children of native maternity survive, at least to middle age, the number of children living per foreign decedent is higher in each age group than the corresponding average for native decedents. In short, the data in Tables V and VI indicate that both the gross and the net average number of children per foreign female is higher than the corresponding averages for native females.

TABLE VI
FEMALE DECEDENTS, BY AGE AND NATIVITY, WITH CHILDREN BORN
AND SURVIVING*

Female Age of Decedents	Average Born for Decedent		Average Living per Decedent		Percentage Living of those Born	
	Native	Foreign	Native	Foreign	Native	Foreign
15-19	0.75	0.78	0.62	0.67	82.5	85.7
20-29	1.79	1.95	1.46	1.60	81.6	81.9
30-39	3.01	4.46	2.40	3.39	79.9	76.2
40-49	3.68	5.53	2.93	3.95	79.7	71.3
50-59	4.01	5.90	2.83	3.88	70.4	65.7
60-69	4.31	6.28	2.96	4.10	68.8	65.3
70-79	5.15	6.43	3.22	3.90	62.5	60.6
80 or over	5.75	6.45	3.24	3.61	56.4	56.0
Total	4.04	5.74	2.75	3.69	68.0	64.3

* Calculated from Publications of the American Statistical Association, Vol. 9, December, 1905, pp. 354ff.

The material we have presented supports the following conclusions:

1. In New York, Indiana, and Michigan the fertility of foreign-born women has always been superior to that of the native women. This superiority is true for all age groups.

2. In New York, Indiana, and Michigan fertility among native married women has been less than that among foreign married women. However, as a larger percentage of the foreign-born women of reproductive age are married than is true of native women, part of the superiority of foreign general fertility is due to the more favorable marital composition of the latter. Were the marital composition of both the native and the foreign-born women identical, their general fertility rates would approximate each other. This conclusion also holds for New England and apparently for the United States Birth Registration Area.

3. The Michigan data also support the following conclusions:

(a) Fertility has declined among both the foreign-born and the native women of reproductive age. This

decline is found whether or not the marital condition of the female population is considered. The decline, however, appears to be greater among the foreign-born women. Consequently it seems probable that there will soon be no appreciable difference between the fertility of the native and that of the foreign-born women. A similar decline may have occurred in Indiana, but the existing data are too incomplete to constitute proof.

(b) Natives of foreign parentage had a birth rate higher than that of natives of native parentage but lower than that of the foreign-born population.

(c) In mixed marriages the attitude of the father appears to have been at least as important as that of the mother in determining the size of family.

(d) Mortality was apparently greater among children of foreign parentage than among those of native parentage. But this excess mortality was less than the excess foreign fecundity. Consequently net natural increase was apparently greater in the foreign than in the native population.

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RURAL COÖPERATIVE CREDIT IN CHINA

A RECORD OF SEVEN YEARS OF EXPERIMENTATION

SUMMARY

Spread of Raiffeisen type to the Orient, 484. — Famine the impetus to the movement in China, 485. — The model constitution of 1923, 486. — The Central Bank and its policy, 487. — Its educational activities, 489. — Credit unions, 491. — Growth of coöperatives, 491. — Status and purpose of loans, 492. — Comparative cost of loans, 495. — The outlook, 496.

Soon after the German famine of 1846-47 Raiffeisen devised the type of rural coöperative credit organization which has proven so signally successful in Europe. Designed originally for service to the farming population in Germany, in course of time it became recognized that with modification it would be equally useful in other areas where the pursuits of the inhabitants were predominantly agricultural. Of late years Raiffeisen's ideas have spread to the Orient, and rural coöperation, particularly of the credit kind, has taken a place of growing importance in the economy of the East.

The Raiffeisen model of rural coöperative credits was first established in India in 1900, and in 1904 the Co-operative Credit Societies Act was adopted, providing government supervision and help. Mr. C. F. Strickland, Registrar of Coöperative Societies in India, in his admirable article in this JOURNAL of May, 1929, has treated at length the development in that country. He estimated that in 1928 there were 105,000 societies with a membership of four million and total resources of \$330,000,000. In Japan coöperation was established under the Coöperative Societies Law of 1909. By 1928

the number of societies had grown to over 14,000 with a membership of four million; but this includes sales, purchase, and productive societies as well as credit. Even in little Siam Raiffeisen's ideas have taken root. Credit societies were first organized there in 1916. The number has now grown to about a hundred, and each society has from fifteen to fifty farmer members. By executive order membership is limited to rice growers.

All the conditions which have created a need for rural coöperative credit organization in other oriental countries, and which have furnished the elements for the growth of the movement there, are to be found in China. The analogy between the economic organization of India and China runs so close as to be almost identical: huge population overcrowding the land, great predominance of agriculture in the economy of the country, abject poverty of the masses of the people, poor credit organization with very high interest rates. But China has been denied a stable political organization, and co-operation there has taken root in spite of bad government, while in India the movement has not only had official protection but in the beginning actual financial assistance. In China, probably because of civil strife, it was not until 1922 that the question of rural coöperation was studied with any effect, and it was a private philanthropic institution, the China International Famine Relief Commission, which undertook the actual establishment of credit societies and provided the funds necessary for a demonstration of the efficacy of the Raiffeisen system when applied to Chinese conditions.

As was the case originally in Germany, it was famine which provided the impetus to this movement. The Famine Commission, organized to combat the emergency of 1920-21, when more normal conditions were established, undertook to attack the famine problem

scientifically and to devote itself to preventive measures. As a first step, hampered by the paucity of reliable statistical material on which to base any plan of action, it instituted a careful field study of Chinese rural economy and published the results which this investigation — the first comprehensive one — brought to light.¹ The facts revealed showed that the provision of credit to the average farmer was a fundamental need and led the Famine Commission to seek some device which would make possible the extension of credit to the individual farmer and which would coördinate this credit system throughout the country. The solution of the problem seemed to lie in coöperation. It was felt that if loans could be extended to a coöperative credit society, secured on the joint and several responsibility of all of its members, who would supervise the extension and collection of loans to individual members, the cost of administration could be kept low, and the ultimate interest rate be greatly reduced. Eventually these credit societies could be coördinated through unions, and the whole controlled by a central bank. Thus a national agricultural credit system could eventually be formed which would provide that in those years when poor crops were harvested in some provinces, additional credit could be provided by calling in funds from districts where the crops were abundant. Thus many of the local famines, which are now so severe as to result in great suffering and actual loss of life, could be entirely prevented, while the permanent prosperity of the rural population through the application of credit at reasonable rates would be greatly augmented.

A model constitution based on the Raiffeisen type was adopted in 1923. It provides many devices to assure the

1. C. B. Malone and J. B. Tayler, *The Study of Chinese Rural Economy*, C. I. F. R. C. publication B-10, Peking, 1923.

permanence of the societies, to promote a measure of self-help on the part of the members, and to prevent any possible special benefits from accruing to persons who might seek to organize societies for private profit. A society must consist of at least twelve members. New members are admitted on the introduction of two members and a favorable vote of at least three fourths of the entire membership. Each member must subscribe to one, or more, non-interest bearing membership shares, but no member is permitted more than one vote, no matter how many membership shares he may possess. In case a member resigns he forfeits his membership share. A member may be expelled by a two thirds vote of lack of confidence. A society borrows on the combined credit of its members, and grants loans only to its members. Loans bear interest which must not be at a higher rate than that current in the locality. An Executive Committee is elected by the full membership to perform executive duties, and a Council of Inspection to audit the books and see that loans are used only for the purposes agreed upon. All officers and committeemen serve without compensation. Any profit realized is retained by the society in its reserve fund and cannot be distributed among its members. A society is an unlimited liability company. It may receive deposits and savings for which interest is paid.

After the adoption of this model constitution the Famine Commission established a loan fund and constituted itself the organizing agency and Central Bank for the movement. It proceeded with great deliberation, particularly in the early stages, in order that the foundations might be well laid and that, so far as possible, the societies might be constituted as the result of local initiative.

Loans are made by the Central Bank only to recog-

nized societies. In this manner a large measure of control is possible. Before a society is recognized it must give satisfactory evidence of a thoro preparation. As a rule, Chinese farmers have been subject to exploitation by corrupt officials and unscrupulous tradesmen. It is therefore not surprising that they are extremely suspicious of any new idea. To win their confidence it is necessary that they understand the real nature of co-operation before a society is formed. During the first year of operation, 1923, eight societies were organized but none was recognized. In 1924 three more were organized and of the total of eleven societies nine received recognition. These first societies provided the laboratory to perfect the model constitution, the accounting system, and actual operation of the plan. They also yielded a small nucleus of volunteer workers who began to spread the idea throughout the countryside. The organizer is now generally a local enthusiast. He may be a country school teacher or a village preacher. Through correspondence, contact with already organized societies, and reading of the literature which is issued by the Commission he becomes interested in the movement and his volunteer services are invaluable. When he has acquainted a group of farmers in a village with the project and explained to them the model constitution, they form themselves into a society. This, in due course, is reported to the Commission at Peking. The Commission is then enabled to set forth its requirements for recognition, and it sends the necessary instructions for the proper organization and administration of a society with blank forms and books for carrying on its business.

The society is thus enabled to begin its corporate life, and in time it forwards its formal application for recognition. A field agent is then sent out from Peking to in-

investigate the society on the spot. He calls on the charter members individually. Among other things he seeks to learn (1) whether there is any deep-rooted ill-feeling existing among groups of residents in the community; (2) whether there are men of bad character in the society (often such persons are influential in the village, and without outside assistance it is difficult for a new society to refuse their application for membership); (3) whether there is at least one member who is literate and able to transact the paper business of the society. He also seeks all the information possible on the general economic and social conditions of the community. The governing committee of the Central Bank hears his report and decides whether or not recognition should be granted. If recognition is withheld the reasons are communicated to the applicant society. It will be seen that the process of forming a society is a tedious one. Often it requires a year or more. Altho it was not so intended, this long period of incubation has tended to eliminate the unworthy.

In addition to the routine work thus involved the Commission has carried on a general promotional campaign for spreading the idea more widely throughout the country, and for improving the societies already formed. This work has divided itself into two main branches: (1) publications, (2) training courses for coöperators.

Western literature on the subject of coöperation has been systematically studied and those works which seem to have direct bearing on the movement in China have been translated and published. Visits to study coöperative methods have been made on the part of committee members to India, Japan and Denmark. A monthly paper called "Coöperation News" has been published and is distributed free to all societies and their members.

In spite of the close supervision which the societies have received, it early became apparent that even more thoro instruction was required. In 1925 the societies then organized were invited to send two delegates each to Peking to attend a training course. One hundred and four delegates from fifty-four societies spent a week in classroom work, which dealt both with the principles of coöperative credit and the methods of operation of societies. The following year two courses were offered and attended by 323 delegates representing 195 societies. In 1927 a different plan was initiated; more intensive training was provided over a longer period for a smaller number of farmers. Some forty were admitted to this course, which, lasting for three months, was given in Peking with the assistance of teachers from Tsing Hua College and Yenching University.

With the rapid growth of the movement the need for trained workers became so great that a Rural Workers' Training School was organized in 1928 with the Famine Commission, Tsing Hua College, Yenching University, and the Hsiang Shan Orphanage coöperating. This school provides a three-year course in practical agriculture and rural work, and the number of applicants for admission already far exceeds the available facilities of the school. In the same year the direct training of coöperative society members became such a problem that it was decided to decentralize it. Local initiative was encouraged and on the local groups was placed the responsibility for organizing and carrying through the courses. In 1928 a total of 363 coöperators representing 158 societies attended the sessions, which were held in four centers. Last year the total attendance was 717 coöperators representing 334 societies. They met in nine centers.

In order to concentrate the coöperative movement,

and also to aid in supervision and administration, all the recognized credit societies, except two organized in the first year, are located in Hopei province in which Peking is almost centrally located. Thus it follows that in some counties of the province there are groups of societies which are fairly close together. This has made possible the organization of credit unions. The first of these unions came into existence in 1925 with ten member societies. Since then eight more unions have been formed. These unions give the members of the individual societies that feeling of solidarity which comes from association with large numbers. They tend to extend the scope of usefulness of the better-trained and more intelligent leaders in the individual societies by drawing these men into closer contact with other societies. The unions, too, have proved to be of marked value in connection with the training courses for coöperators. It is quite possible also that eventually, when the movement grows, the Central Bank will make loans only to the unions, and they in turn will reallocate the funds to their member societies. This will tend greatly to facilitate that decentralization of organization and supervision which will become essential with the growth of the capital funds of the Central Bank.

There were at the end of 1929, 246 recognized societies, and 572 not recognized, making a total of 818, with a membership of 21,934 farmers. The following table gives the growth of the movement since the first year.

	SOCIETIES						
	Year 1923	1924	1925	1926	1927	1928	1929
Recognized . . . . .	...	9	44	97	129	169	246
Not recognized .	8	2	56	220	432	435	572
Total	8	11	100	317	561	604	818

MEMBERSHIP

Recognized	403	1,270	3,288	4,354	5,624	7,862
Not recognized	256	47	1,062	4,744	8,836	9,677
Total	256	450	2,332	8,032	13,190	15,301
						21,934

The whole movement has been stimulated by the use of a very limited capital fund. This was in line with the policy of the Commission to develop the work gradually and only on an experimental basis. The total of loans granted by the Central Bank to recognized societies from year to year have been as follows.

LOANS GRANTED TO SOCIETIES

Year 1923	1924	1925	1926	1927	1928	1929
....	\$3,290	\$10,450	\$32,440	\$60,795	\$89,374	\$122,414

The status of loans at the end of 1929 is shown below.

Status	No. loans	Amount
Repaid	160	\$83,244.59
Not due	59	24,900.78
Extended	23	9,893.86
Due	13	4,374.77 ¹
	255	\$122,414.00

¹ Including sums in transit.

Loans may be made by the societies to individual members only for the following specified purposes:

(a) For seed, food, cultivation expenses, or cattle fodder.

(b) For purchase of carts or cattle, liquidation of small debts, house building, purchase of implements, and equipment.

(c) For purposes which will continue to be productive for several years, such as canals, dikes, irrigation and drainage projects.

(d) For necessary social obligations.

(e) For home and village industries such as hand spinning, braiding, and brewing.

It is significant that a large portion of the farmers have used coöperation as a means to free themselves from the high interest rates which their old debts were carrying. Next in number of loans are those for purposes that are of a distinctly productive nature.

Purposes	Members borrowing	Total amount	Percentage of total
Repaying old debts	1,247	\$24,078.00	23.82
Animals	765	16,164.00	15.99
Food	729	13,116.50	12.97
Implements	425	8,266.50	8.18
Repairing houses	255	6,812.20	6.74
Seeds	291	5,143.00	5.09
Redeeming land	198	5,103.60	5.04
Fertilizers	221	5,031.00	4.98
Reclaiming land	229	4,828.30	4.77
Irrigation	50	1,503.00	1.48
Marriages, and funerals	64	1,434.00	1.42
Others	492	9,623.00	9.52
Total	4,966	\$101,103.10	100.00

The following table gives an analysis of the loans extended during the past four years and the proportion of repayments and renewals.

AMOUNT OF LOAN

NUMBER OF LOANS

	1927	1928	1929	1930	1927	1928	1929	1930
Repaid when due	22	66	107	171	\$11,475.33	\$40,432.33	\$58,975.08	\$ 87,306.03
Outstanding	48	32	52	63	28,535.00	14,075.00	22,483.00	28,768.00
Renewed	17	35	26	19	8,134.67	13,874.67	12,161.00	8,446.84
Due, including sums in transit .....	..	3	12	16	.....	1,300.00	2,941.92	5,207.13
Total	87	136	197	269	\$48,145.00	\$69,682.00	\$96,561.00	\$129,728.00

It will be seen that both the number and the total of loans renewed has steadily decreased during the past two years. The reasons given for extension of loans and the proportion of renewals under each heading are as follows.

Causes	Percentage of renewals
1. Famine due to natural causes	7.46
2. Military disturbances	45.06
3. Bandits	6.73
4. Combinations of the above causes	4.33
5. Excessive remittance rates and interruption of remittance facilities	26.70
6. Absence of society officers	
7. Negligence of society officers	9.69
8. Non-productive employment of loans . . . . .	...
9. Bad faith of members, or irregular practices of officers . . . . .	...
10. Other causes and unknown causes . . . . .	...
	<hr/> 99.97

Obviously there is not as yet sufficient experience or a sufficient number of extensions to make these figures yield more than general indications. The significant fact is that payment has been made when due without a single failure, except in those instances when renewals have been granted on formal written request of the societies concerned. It should be remembered also that these societies are located in a province which has been the scene of civil strife, banditry, and, during the past two years, of famine in some sections.

A recent survey in Hopei Province (where the co-operatives are centered) revealed the prevailing interest rate in the villages to be 3 per cent monthly and the longest term loan period to be ten months. In these same villages members of the coöperatives have been able to borrow from the societies for 1 per cent monthly or less. Obviously when the movement is taken over by private interests the Central Bank will demand more

than the nominal rate of 6 per cent which the Famine Commission is charging, but even if this rate is increased to 12 per cent, the rate current for well-secured loans for industrial purposes in the cities, there is ample margin to permit of a radical saving in rates over those now prevailing in the country districts.

The coöperative movement in China started with rural credits. In the third year savings were added. At present experiments are being made in purchasing and marketing, and these features will be added as their usefulness is demonstrated. As has been said before, the experimental stage is by no means over, but the value of the coöperative societies has been so amply proven that we may confidently expect that rural coöperation has come to China to stay, whatever course its future may take. The idea of coöperation on any scientific basis was revolutionary in rural China, bred as the race has been on familism as the primary means of organization. With the experience gained in working together to secure cheaper credit, for putting savings to work instead of burying them in the fields, and to market more effectively their products, the farmers will find further spheres of usefulness in working together as a community instead of working against each other in different family units. Moreover, the societies, composed as they are of the most progressive, intelligent, and reliable men of the villages, will serve as the most effective channel through which modern ideas can be introduced.

Urgent calls for the organization of coöperative credit societies are coming from a number of provinces. Several Chinese banks are interesting themselves in the possibilities in this field and plans are under way for the establishment of a private coöperative bank. But development will of necessity be sporadic while the political organization of the country is so confused. The

age-old guilds of China would indicate that in spite of the paternal nature of their social organization the Chinese have long ago learned the merits of coöperative effort. It only remains to develop this capacity by means of the new technique, and Chinese farmers, in spite of their conservatism, have shown that they are prepared to give this plan a trial.

When it becomes widely recognized by Chinese bankers that rural coöperative societies are a good credit risk, we may expect a much more rapid development of the movement. The government authorities in various provinces have indicated great interest in the idea, but in view of present political conditions, there is little promise of any permanent promotion from that source. It is hardly probable that the urgent need of the warlords for funds would permit any central rural bank to flourish. While one group might undertake to grant aid to the movement in order to establish it, any real success would be a temptation to the confiscatory measures which are associated with civil wars in China, as elsewhere. And the frequent changes of administration which are now the rule would work a detriment quite apart from the imminent danger of withdrawal of the funds for military purposes.

Hence it appears that the future of rural coöperative credits lies in the hands of the private bankers, and while it would seem that industry, which is centered for the most part in the Treaty Ports, where it has the benefit of a measure of foreign protection, offers greater security, it is permissible to expect a gradual shift in the direction of agriculture, the backbone of China's economy, in proportion as the means to apply credit to agriculture is perfected. Chinese bankers, like Chinese farmers, must be shown the way, and the demonstration now being carried on by the Famine Commission should eventually

persuade them that a *Landbank* has the place in China's economic organization which it occupies in other countries. The question of resources has been settled by the progress which has been made in the concentration of funds in the new modern banks. Those who argued that China had few cash resources were answered in 1921 when the Chinese formed their own banking group to show the new International Consortium that China had a banking rating that could not be ignored. It was a witness to the growth of financial mobilization. Granted the coöperation of the Chinese banks, the development of rural coöperative credits in China may one day be important enough to attract the attention of foreign capital.

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REVIEWS

IRVING FISHER'S "THEORY OF INTEREST"

INTRODUCTION

IN the preface to his "Theory of Interest"¹ Fisher says that he does not feel called upon, in connection with this new presentation of his theory, to make any material changes in his view of the subject. The numerous criticisms to which his book *The Rate of Interest* was subjected have resulted only in his changing the manner of presentation so as to clear away certain misunderstandings to which the first edition laid itself open. Thus one objection frequently raised against Fisher's theory is to the effect that it overlooks the part played by productivity in the explanation of the phenomenon of interest, or that it attaches no importance to this factor. Seager and Brown,² in particular, have made this assertion. In replying to these criticisms Fisher has insisted that the productivity of capital does have a place in his theory. This contention brought down upon him, at the hands of Professor Fetter, the additional reproach of inconsistency: "If he (Fisher) has not meant to deny in his previous writings the validity of productivity theories, one knows not what to believe."³ To this Fisher may properly reply that he had no wish to deny the influence of productivity upon interest, but merely meant to criticize the mode and manner (in the well-known phrase of Böhm-Bawerk) in which the so-called productivity theories establish the connection between productivity and interest.

1. New York (Macmillan) 1930. xxxii+566 pp.; \$6.

2. Brown: "The marginal productivity v. the impatience theory of interest." *This JOURNAL*, xxvii, 1913, 630ff.; and Seager: "The impatience theory of interest," *American Economic Review*, December, 1912, p. 835.

3. Frank A. Fetter: "Interest Theories, Old and New," *American Economic Review*, March, 1911, p. 69.

The most important change in presentation consists, then, in a much greater emphasis upon productivity (or, as Fisher calls it, "investment opportunity") — an emphasis which finds definite expression in the very title of his book "The Theory of Interest, as Determined by Impatience to Spend Income and Opportunity to Invest It." I believe that Fisher is justified in maintaining that he has not altered his position; and indeed it would not be fair to cast doubt upon his own interpretation of his views. As to whether the misunderstanding arose from defects in presentation in the first edition, there is no longer any point in disputing. We can therefore proceed on the basis of having the old theory before us in new attire, and we shall begin with a brief résumé of the argument.

I

In the first chapter, "Income and Capital," Fisher gives a brief summary of his work "The Nature of Capital and Income," which he first published in 1906 by way of preparation for his theory of interest.⁴ Fisher, as we know, takes income as his starting-point. Income in its most fundamental sense is what is called "psychic income," enjoyment, or subjective income. He defines it as "a series of events" (p. 3), psychic events, "human enjoyment" (p. 5). This is approximately what other economists call satisfaction of need, or total economic utility. Back of psychic income stands objective or real income — that is, the aggregate of the services of consumption goods, "the final physical events in the outer world which give us our inner enjoyment" (p. 6). The size of real income, which comprises a miscellaneous lot of things, cannot be directly measured. In order to obtain an idea of its size, we must go back a step and get at the cost of living. The money cost of real income — the amount of money paid for what we use and enjoy — is the measure of the amount of income (pp. 6, 7). Here, then, we are concerned with money outgo. Still another step farther back and we arrive at money income. This "includes all money received which is not obviously, and in the nature of the case, to be devoted to rein-

4. Last edition, New York (Macmillan) 1927.

vestment" (p. 10)—that is, income in the strict sense. Money income is either converted into real income (spent) or invested (saved). Investing, however, is nothing else than postponed spending (p. 9); and the value of goods of which the purchase constitutes investment—that is, goods of higher order—is determined by the final or subjective income which they will furnish, after deduction of a discount. "Capital value is simply future income discounted or, in other words, capitalized" (p. 12); and "the link between income and capital is the rate of interest. We may define it as the percent of premium paid on money at one date in terms of money to be in hand one year later" (p. 13). Interest is therefore a price in the exchange of present for future goods (p. 61). Like all prices, it is based in part upon a subjective and in part upon an objective element. The subjective element is the individual's desire—"the marginal preference for present over future goods," or, more exactly, over future enjoyable income: in other words, "human impatience" (p. 62). The objective factor is "the investment opportunity."

The degree of impatience (which may be positive, negative, or zero) on the part of a given individual depends in the first place upon his income—and not only upon (a) the size of his income but also upon (b) its distribution in time ("time-shape"), (c) its composition, and (d) its probability (degree of risk); and it depends in the second place upon personal characteristics, such as foresight, self-control, expectation of life, etc. These circumstances determine "the degree of impatience" of any individual. (Chapter IV.)

How it comes about that from the meeting, in the market, of these individual time-preferences (of demand for and supply of present and future goods) there results a single market price, Fisher explains in three successive approximations.

In the first approximation he assumes that the income stream of every single individual is exactly known, and that the only way in which it can be altered is through borrowing or lending. In the second approximation also the income streams are known, and all risk is thus eliminated, but the time-shape of the income stream may be altered not only

through loans but also by other means. In the third approximation the element of risk is introduced.

The first approximation (Chapter V) deals in the main with what is usually designated as consumers' credit. Everyone will borrow whenever his particular time-preference is greater than the market rate, and will lend whenever it is less than the market rate. And just as in an ordinary market an equilibrium is established when the exchange ratio corresponds to the marginal utility of each good for every individual member of the market, so likewise the market for future goods arrives at an equilibrium only when the market rate of interest exactly corresponds to the time-preferences of individuals, and supply and demand in respect to present and future goods are evenly balanced against each other.

In the second approximation (Chapters VI-VIII) Fisher drops the limitation that the income stream of individuals is fixed and can be altered only through loans — that accordingly the income stream of society itself cannot be changed — and assumes that even apart from loans people have a choice among different income streams, among different uses to which their possessions may be put; as, for example (to use a case given by Fisher), whether to apply a given piece of land to forestry, mining or agriculture. Fisher speaks of "optional income streams," of the "opportunity to invest." In this way he brings in the factor of productivity, and it is in his method of establishing the place of this factor that he sees his most important contribution to the theory of interest (p. 182). The individual is thus presented with a double choice: he must first decide in favor of one or another of the possible income streams — that is, he must decide how to invest his capital; and secondly he must decide whether he shall, through loans or borrowings, alter the "time-shape" of the chosen income stream. The guiding principle in making this choice will be, first, to select the income stream which has the greatest present value as capitalized according to the market rate of interest, and, second, to regulate through loans the flow of this income stream according to one's individual time-preference. Since the choice of the income stream is

always made in the first place with a view to the possibility of changing its "time-shape" through loans, and since the choice of that investment opportunity which has the greatest present value is often made possible only by raising the required initial capital through loans, it follows that Fisher's theory in its second approximation covers also the case of producers' credit.

In the third approximation (Chapter IX) the assumption of sure prevision is dropped, the factor of risk is introduced, and at the same time the uniformity of the market rate of interest ceases to hold. But this part, which goes outside the domain of the theory of interest in the strict sense, is more sketchily developed.

In the following chapters (X-XIV) Fisher develops his theory again, in all three of the approximations, in geometric terms and in terms of formulas. In Chapters II and XIX he gives an outline of his well-known doctrine concerning money interest and real interest, the connection between interest movements and price movements — a doctrine which he developed for the first time in his "Appreciation and Interest."⁵

Professor Irving Fisher's work on interest is one of the most important monographs in economic literature. The presentation is distinguished by masterly elegance, the thought is cast as in a single mould, and there is hardly a flaw to be found for criticism to fasten upon. I believe that in the logical structure that is erected upon the assumptions made no mistake or inaccuracy can be discovered; in point of form the theory is unimpeachable, it is not open to criticism within its own bounds. We shall therefore confine ourselves to inquiring whether the empirical assumptions fit the case and the theory is complete, whether more might not be brought out by the introduction of certain detailed empirical assumptions. This last is tantamount to the question, which certainly has already forced itself upon many readers, whether Fisher's theory is not too purely formal to be in all respects satisfactory.

5. Publ. of the American Economic Association, 3d Series, vol. xi, no. 4, 1896.

II

So far as concerns the basis upon which Fisher's theory of interest is erected — his theory of income, of the relations between psychic income, real income, and money income, his view that investing consists simply in deferring enjoyment income — I believe that on this subject Fisher has not spoken the last word, and that important improvements are possible and necessary. I wish to say emphatically, however, that the rest of his theory is not, or at least is not seriously, shaken by these considerations.

Fisher's view concerning the measurability of income in its different stages seems to me disputable. Of real income Fisher says that "even the individual who experiences them (the outer events) cannot weigh and measure them directly. All he can do is to measure the money he paid to get them" (p. 6). This holds also, according to Fisher, of psychic income: "These outer events (*i.e.*, real income) . . . are like the resultant inner events in not being very easily measured" (p. 6). Now this seems to me erroneous. It would mean that in a régime of barter, in which there are no money prices and no money incomes, there would be no possibility of the individual's ascertaining the size of his income, or, to put it more exactly, of his comparing two incomes with each other in respect to size. In reality, however, this possibility does of course exist. There is, to be sure, no possibility of comparison on a numerical scale. One cannot, for example, say that real income A is 10 per cent greater than real income B; it is agreed that arithmetical determinations of this kind are not possible for quantities of value and utility in general. The only sort of comparison as to size that can be made for real incomes is the determination that one real income is greater than, equal to, or smaller than, another. Even the drawing of an inference from money income to real income is not permissible. We can, to be sure, compare the amounts of money; but to assert that a 10 per cent greater money income yields a 10 per cent greater real income or a 10 per cent greater psychic income would be an absurdity. All we know is that a greater money income yields a greater real income, and this

is merely another way of saying that a greater real income is preferred to a smaller. The individual's act of choice is the ultimate elementary fact to which economic analysis can carry us. That the statistical comparisons of real incomes by means of index numbers, which Fisher might adduce as a counter-argument, can be interpreted in this way, and in this way only, I have shown in my book *The Meaning of Index Numbers* (*Der Sinn der Indexzahlen*); and on this point I can cite also the authority of J. M. Keynes (see his "Treatise on Money," London 1930, vol. 1, chapter 8). If, for example, it is said that the real income of an American workman is 60 per cent greater than that of a German workman, this statement does not mean that the psychic income of the American is 60 per cent greater than that of the German, or that he feels, as it were, 60 per cent happier than the German feels — what sense would there be in that? — but that the money income of the American workman is 60 per cent greater than such a money income as would yield, at American prices, "the same real income" that the German workman gets at German prices; or, to be still more accurate, it means that the American's money income is 60 per cent greater than that money income which, at American prices, would leave him with the income of the German regarded from the standpoint of the "margin of indifference." But I shall not go into this more fully, since it is of no consequence for Fisher's further line of thought.

2. Of greater weight are the doubts that present themselves as to whether psychic income is really what is involved in Fisher's theory. All economic activity is directed, according to Fisher, toward enjoyment income: "Spending and investing differ only in degree, depending on the length of time elapsing between the expenditure and the enjoyment. To spend is to pay money for enjoyments which come very soon. To invest is to pay money for enjoyments which are deferred to a later time. . . . We invest money in the purchase of bonds, farms, dwellings, or automobiles, or even of suits of clothes" (p. 9). Fisher goes so far as to say that "the business man" (whose activity consists in investing) "conducts his business

with an eye always to ultimate enjoyable income, whether for himself, his family, or others. In a sense it is his home that runs his business" (p. 360).⁶

I do not think one can say that the difference between spending and investing consists only in the fact that in the case of investing the psychic income is deferred. Investing, too, very often has a feeling of pleasure attached to it, and thus yields psychic income at once. It is not necessary to resort to the case of the miser, to whom the heaping up of treasures — this too is in Fisher's sense investing — means the filling of an urgent need. The successful enlargement of a business, the improvement or expansion of an enterprise, the accumulation of a great fortune by correct prevision of the future — all of which are typical entrepreneur activities, which yet unquestionably come under the head of investing in Fisher's sense — these achievements by their very nature bring at once contentment, satisfaction of the acquisitive instinct (if you will), joy in work, joy in success, or whatever one chooses to call these pleasurable sensations. Surely it will not do to regard all this as merely an anticipatory taste of the pleasure which the increase of future income will furnish. There are, then, investments that do not involve deferred enjoyment. On the other hand, I can imagine acts of spending which involve deferred enjoyment. If, for example, I take a nasty medicine in order to ward off future suffering, it cannot be said that I obtain instant pleasure. The enjoyment, which consists in warding off pain, is undoubtedly a deferred enjoyment, and it is equally certain that before this enjoyment can be had an act of spending must take place. Mr. Flux, in the paper mentioned above, puts to Fisher the question whether certain cases of spending — for example, the purchase and consumption of food — may not be regarded as

6. In his discussion of "The Rate of Interest," Mr. Flux objects to the concept of psychic income. The objection, however, rests on the irrelevant ground that the determination of the value of capital goods does not turn upon their usefulness — that is, their capacity to furnish enjoyment income in the future — but upon the real costs which are required for their production. (*Quarterly Journal of Economics*, xxiii, 307.)

investments in the human body, and Fisher shows a certain inclination to do so. Clearly, however, if we do this, the difference between the two concepts "spending" and "investment" is completely reduced to a question of degree, and we must look round for some other way of bringing out the essential distinction that we have in mind.

I think, therefore, that Fisher has failed to work out appropriate definitions of "spending" and "investing." I should not, however, by any means wish to be taken as concluding that there is no meaning in the distinction. I merely propose that we say "consumption" instead of "spending." The concept of "consumption" would have to be defined as such an annihilation, or value-lessening alteration,⁷ of goods as does not have for its purpose the production of other goods or the increasing of the value of other goods. The act of consumption may or may not be attended with a feeling of pleasure. The same may be said of every act of production, or, as Fisher would say, of investing, which may be defined as the alteration or annihilation of goods for the purpose of making other goods, which in turn may be destined either for consumption or for new investment. Space does not permit me to undertake the task of giving perfectly exact definitions of these terms. The groundwork for such definitions has, however, been partly furnished in the foregoing critical observations.

III

An important point, which is not yet fully cleared up — tho in the new presentation of his theory Fisher is at great pains to remove all doubts — is the rôle of productivity in the determination of the rate of interest. To the objection that he has entirely neglected the factor of productivity, that he denies to it any influence (an objection made especially by Henry Seager), Fisher replies that this is not the case; and he is right in saying, "If I am asked to which school I belong — time-preference or productivity — I answer 'To both'" (p. 182). The word productivity is to be understood here,

7. The only criterion of value-decrease or value-increase is, as before, the individual's act of choice.

and throughout, in the Böhm-Bawerk sense of the yield-increase arising from roundabout production processes. Fisher is right in saying that this situation is taken account of in his second approximation. As to the reason why the yield-increase of roundabout processes regularly obtains, Fisher has nothing to say. He admits, however, that in point of fact it does regularly obtain; and he takes it into account in most of his examples. In the example (pp. 161 ff.) of the forest which continues to grow up to a certain point, there is a yield-increase. On page 182 he accepts the conclusions which Professor Brown draws in the supposed case in which there is a constant yield-increase of 10 per cent — that is, that every lengthening of production increases the product by 10 per cent. On page 192 the yield-increase is explicitly recognized as the empirically discovered rule: "In the real world our options are such that, if present income is sacrificed for the sake of future income, the amount of future income secured thereby is greater than the present income sacrificed." Even that particular kind of yield-increase which Böhm-Bawerk calls a "parallel phenomenon" connected with the basic general principle — namely, the fact that one may choose, in the case of durable things, between different degrees of durability (for example, between a house that will last fifty years and one that will last a hundred years), and that a good that lasts twice as long as another does not cost twice as much, but less than twice as much — this, too, is taken account of by Fisher: "The cost of constructing a 100-year-house occurs in the present; that of two successive 50-year-houses occurs half in the present and half at the end of 50 years. In order that the more durable house may have any advantage as to cost, the excess of its cost over the cost of the less durable one must be less than the present value of the cost of replacing it 50 years later." (P. 199.)

Fisher also admits that "nature's productivity has a strong tendency to keep up the rate of interest" (p. 193). Further amplification of the technical basis upon which the yield-increase rests would, to be sure, be very desirable. But in any case it cannot be said that Fisher has overlooked this aspect

of the matter. His theory, too, is of such generality that it takes in not only the case of yield-increase, but also the case — of no practical importance — of yield-decrease (see the imaginary "figs" example, p. 191).

There is still an open and unsettled dispute between Fisher and Böhm-Bawerk as to whether the third of Böhm-Bawerk's grounds — that of the technical superiority of present over future goods — is by itself, without the aid of the first two grounds, capable of explaining the phenomenon of interest. Fisher, as we know, contends that it cannot be made to explain it; and in "The Rate of Interest," in a long critical discussion of the point, he seeks to show that the third ground does not by itself bring out any superiority in value attaching to present goods, and that Böhm-Bawerk, in attempting to establish the self-sufficiency of the third ground, surreptitiously introduces both of the first two grounds. Against this criticism, which has been made by Bortkiewicz also, Böhm-Bawerk defends himself in the eleventh excursus — over a hundred pages long — of the third edition of his "Positive Theory of Capital." Fisher, in his new edition, says merely — "I can find nothing in his answers which affects the main argument [of my criticism]" (p. 483). I have an idea, however, that Fisher did not follow with close attention the rather long-winded and difficult argument of Böhm-Bawerk in the above-mentioned excursus. If he had done so, he could not have failed to notice that Böhm-Bawerk paves the way for a compromise very acceptable to both sides.

Fisher maintains that it is only by arbitrarily stopping short, in the tables which he adduces to prove his point, that Böhm-Bawerk reaches his conclusion as to the superiority of present goods. If a work-month of the year 1888 yields its maximum product after a production period of seven years — that is, in the year 1895 — then the same thing is true of the work-month of 1889, with no difference but that it reaches its maximum a year later. Böhm-Bawerk, then, obtains his result by arbitrarily breaking off with the year 1897. For that year the earlier work-month gives, of course, a greater result. But this superiority vanishes when we extend the series. And

extend them we must; for, on the assumption adopted, the circumstance that the later work-month attains its maximum a year later has no significance, since we are leaving out of account the first two grounds (namely, under-estimate of the future and under-endowment of the present).

To this Böhm-Bawerk replies (in his rejoinder to Bortkiewicz, page 349 of the eleventh excursus) that it is not entirely a matter of indifference when the maximum is reached, since in any case we have to do with a finite economic period. If, now, the yield-increase extends beyond the economic period, a technical superiority of the earlier work-months obtains for the entire domain concerned, and disappears only at a point which, since it lies beyond the period which is taken into consideration in our economic scheme, does not interest us. As for the case where the yield-increase reaches its maximum within the economic period, Böhm-Bawerk expressly admits (p. 349) that here the third ground fails of effectiveness.

These considerations seem to me so clear that only two points are left about which there is room for dispute. The first is the question of how far, in actual experience, the yield-increase continues. On this point we must, I think, agree with Böhm-Bawerk, who says that it does not extend to infinity, as Fisher would have him assert (p. 481), but does extend over every economic period that has to be taken into account for practical purposes. (Here Fisher suffers a just penalty for having neglected to make an investigation of this empirico-theoretical state of facts.) The second dispute that might arise is as to whether we should regard the fact that we have to do with limited economic periods as an effect of the first two grounds. This is clearly a dispute over words — that is, over how we are to interpret the expressions “underestimate of, and overprovision for, the future.” So fair and generous a critic as Irving Fisher will surely have to believe Böhm-Bawerk when the latter says that by those expressions he did not mean to refer to the mere fact that the economic period is of limited extent. On the other hand, Böhm-Bawerk has admitted that those first two causes have the effect of shorten-

ing the economic period (p. 400). Fisher therefore has the satisfaction of the admission that sometimes it is only through the first two grounds that the third ground becomes effective. The limitation of the economic period is the *conditio sine qua non*, while Böhm-Bawerk rightly holds that the yield-increase is one of the *conditiones per quam* — which Fisher also admits when he says: "Nature's productivity has a strong tendency to keep up the rate of interest" (p. 193).

One consequence of the yield-increase of roundabout production processes is that the future is better taken care of than the present.⁸ On this point Fisher remarks that in that case the second circumstance, the over-provision for the future, "will be forced back into existence by the choice of roundabout processes. In other words, the technical superiority of present goods produces interest by restoring the other two circumstances" (p. 483).

Here again we come to a dispute over words. For here too Fisher must believe Böhm-Bawerk when he says that he "asserts that his third ground is independent of 'any difference in provision arising from other causes (*i.e.*, not from the yield-increase itself)'" (p. 483).

The following difference might also be mentioned. Böhm-Bawerk and many other writers, as is well known, distinguish between the explanation of the existence of interest and the discovery of the principles upon which its rate is determined. Fisher rejects this distinction, and demands that the existence of interest and its rate be explained *uno actu* (p. 67). Fisher himself has shown, too, that this difference can easily be got rid of. Böhm-Bawerk, indeed, occasionally mentions negative interest; but in general, whenever he speaks of inter-

8. This does not, as one might think, contradict the law of adjustment of marginal-utility levels; for precisely in consequence of the yield-increase of roundabout production processes we have to compare the value of a small product with high marginal utility in the present with the value of a larger product with lower marginal utility in the future, which can be produced instead of the smaller amount in the present. Cf. Böhm-Bawerk, *op. cit.*, p. 422n. F. A. Hayek, "Zur Problemstellung der Zinstheorie," *Archiv f. Sozialw. u. Sozialpolitik*; bd. 58, 1927, p. 523.

9. This quotation comes from the first edition of the "Positive Theory."

est he has in mind positive interest. This is not the case with Fisher. He understands by interest the premium which one must pay when one wishes to exchange future goods for present goods. This premium may be positive, negative, or zero. If, then, one is speaking of the exchange-ratio between present and future goods in this neutral sense, there is certainly very little point in making a distinction between the explanation of interest as such and the explanation of its rate. If interest is simply the exchange-ratio between present and future goods, the explanation of interest can mean nothing but the assignment of the reasons why the exchange between present and future goods takes place at all. But if with Böhm-Bawerk we understand by interest only positive interest, there is a perfectly good sense in which one may distinguish between explaining why there always is interest and explaining how its rate is determined.

I think, therefore, that I am justified in concluding that the difference between the theories of Fisher and Böhm-Bawerk is smaller than the two eminent authors were willing, in the heat of the combat, to admit. That the difference between Fisher's and Böhm-Bawerk's *agio* theory and a liberally interpreted abstinence theory is likewise minimal, has been shown by Professor Taussig in his brilliant paper "Capital, Interest, Diminishing Returns" (this JOURNAL, vol. 22, 1908).

Fisher's theory seems to me to be compatible with Schumpeter's theory also. Schumpeter's theory, as is well known, consists in a negative and a positive thesis — the one being that in a static economic society there is no interest, and the other that interest is brought about by dynamic events of a particular sort. The first assertion falls at once into line with Fisher's scheme; for Fisher himself says that "the preference for present over future goods of like kind and number is not, as some writers assume, a necessary attribute of human nature" (p. 190). I consider this thesis of Schumpeter's and Fisher's to be false. Such a static economic society is, to be sure, conceivable, but it is contrary to all the facts of experi-

ence,¹ even if it is reconcilable with Fisher's economic scheme.

Altho Schumpeter's negative thesis is, accordingly, untenable, I believe that the positive side of his theory is correct, in that the dynamic forces which he adduces — namely, the demand for capital on the part of entrepreneurs, who, in an economic society which is not in a condition of static equilibrium, make temporary profits² — afford an additional reason for interest. (Whether the entrepreneurs initiate this development, as Schumpeter supposes, or not, is for us a matter of indifference.) In other words, even if there were no other reasons for the existence of interest, it would come about as a result of the causes adduced by Schumpeter; and if there is such a thing as static interest, it will rise, as a result of this dynamic factor, above its static level. It is obvious that this state of things easily finds a place in Fisher's scheme; he represents it as a particular form assumed by the "opportunity curve" of these credit-seeking entrepreneurs.

This capacity of Fisher's theory to take in without the slightest difficulty a proposition empirically so untenable as that in a static economic society interest is at zero, shows that the theory is of a very high degree of abstractness, and is in pressing need of development from an empirical standpoint by the application of data derived from experience.

IV

Fisher makes hardly any use of the fact of the yield-increase of roundabout production processes; indeed he takes it into account only in the examples with which he adorns his theory, and not in the development of the argument itself (altho a tendency in that direction is sometimes shown).³ This is

1. I can imagine that, in a static economic society such as Schumpeter postulates, there would be no interest on loans, since in such a society credit operations would occur only in exceptional cases; but there would nevertheless have to be an "implicit interest" as a result of "abstinence in the sense of refraining from accumulation." (Lionel Robbins in his paper "On a certain ambiguity in the conception of stationary equilibrium"; *Economic Journal*, June, 1930. See the note on page 214, to every word of which I subscribe.)

2. In a static society there are of course no profits.

3. In Chapter VII, §5, "Marginal Rate of Return over Cost."

responsible for his failure to incorporate the phenomenon of interest in the general scheme of the capitalistic economic process. The connection of interest with wages, ground-rents, and above all with a progressive upbuilding of production is not clearly worked out. A grandiose, comprehensive picture of the economic flow such as is to be found in Böhm-Bawerk's celebrated chapter "*Der Kapitalmarkt in voller Entfaltung*,"⁴ is wholly wanting in Fisher. For this reason the connection between interest and money is in Fisher very unsatisfactorily brought out. He practically confines himself to repeating his well-known thesis that rising prices tend to bring about a rise in the rate of interest, and vice versa — and for the rest he loses himself in playing with statistics which are supposed to show the degree to which these hypotheses correspond with reality. The fundamental connection between money interest and commodity prices, which was analysed for the first time by Wicksell in his book "*Geldzins und Güterpreise*," is, to be sure, mentioned by Fisher on page 442. There he says that "a change in the rate of interest undoubtedly has an effect upon the price level, as the reverse"; and it is even pointed out that Wicksell was among the first to recognize this connection. But Fisher does not recognize that we have here one of the most fruitful ideas of modern economic theory.⁵ In point of fact, the economic influence of changes in the rate of interest is not limited to the circumstance that it causes displacements of the price-level and thereby effects a displacement of distribution between creditors and debtors. A change of the rate of interest, especially an artificial reduc-

4. Which was later supplemented, and translated into mathematical language, by Wicksell and G. Åkerman. Åkerman's important book "*Realkapital und Kapitalzins*," Stockholm, 1924, has escaped Fisher's notice.

5. Attention should also be called to the fact — not mentioned in Fisher — that the distinction between natural interest and money interest in Wicksell has an entirely different meaning from that which is given in Fisher to the distinction between money interest and real interest. Wicksell's theory relates to the effective bank-rate (not, for example, to the case of a low bank-rate accompanied by rationing of credit), while Fisher's theory is by no means limited to the bank-rate. The difference, however, cannot here be gone into in detail.

tion of it by the banks, has far more profound consequences. It effects a reconstruction — a transformation — of production, a lengthening or shortening of the social production-period. An "artificial" lowering of the rate of interest through the banking system brings about an excessive lengthening of the production-period; roundabout production processes are started which afterwards prove to be too long and cannot be maintained.

This thought was expressed by Wicksell himself, and was afterwards more clearly enunciated by Ludwig Mises in his "Theorie des Geldes und der Umlaufsmittel," where it was applied to the explanation of economic crises. How fruitful these considerations are, and how deep an insight they afford into the machinery of the capitalistic system, has been shown by their development in some writings of F. A. Hayek.⁶ A complete understanding of the process of saving, and a disproof of the doctrine — so harmful and so popular today — that economic crises are caused by excessive saving, can be obtained only on the basis of these views. Upon this basis it is an easy task to find a place in one's theory for the "institutional" factors which influence the rate of interest — for example, the factor of the establishment of banks. His neglect of these "institutional factors" has laid Fisher open to a number of attacks on the part of "realistic economists."⁷

With none of these extremely important matters does Fisher concern himself. But, as I have said, this neglect is not due to a failure in logical deduction, but to an incompleteness in the detailed working-out of the theory. A certain lack of proportion, however, in the structure of the work appears in Chapter XIX, on "The Relation of Interest to Money and Prices," where fifty pages are devoted to the statistical investi-

6. "Geldtheorie und Konjunkturtheorie," Vienna, 1929: "Can Saving be an Absurdity? — A Criticism of the Theory of Crises of W. T. Foster and W. Catchings." *Zeitschrift für National Ökonomie*, vol. i, 1929. This essay will shortly appear, under the title "The Dilemma of Thrift," in the London "Economica."

7. See, for example, the remarks of Prof. A. W. Marget: "Irving Fisher's Theory of Interest," *Zeitschrift für National Ökonomie*, vol. ii, 1931.

gation of relations which cannot be satisfactorily explained without the aid of those theoretical considerations which, as I have indicated, are wanting in Fisher.

In regard to these slight defects Fisher will perhaps say that they relate to matters that lie outside the limits which he has set himself in propounding his theory of interest — that they do not belong to the “pure” theory of interest. And apart from these defects, “The Theory of Interest” is undoubtedly a landmark in theoretical economics. It is hardly an exaggeration to say that Fisher’s work furnishes the base from which every future systematic theory of interest must start.

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SOMBART'S DIE DREI NATIONALÖKONOMIEN¹

IN this latest volume from Sombart's prolific pen he offers his systematic development of his own philosophy of economic thinking. "Economic method" would be altogether too narrow a term to describe the broad sweep of his inquiry. It affords, as he says in his concluding sentence, a guide-book or catalogue to his own life-work. It is built up in the form of a critical survey and classification of the forms of thinking used in economics from Aristotle to the present time; with a more detailed development of his own preferred method, and a final synthesis in which each of the major types finds its place. Much of his material is drawn from philosophers, many of whom will be quite unfamiliar to an audience of American economists. Sombart's erudition continues to command respect.

His three types of economics represent a classification on grounds of method and underlying philosophical character, of which, as he notes, the writers themselves are often unconscious, and which goes deeper in a logical sense than the more obvious differences of which everyone is aware. To Sombart, it seems strange that schools of economics should be classified according as they adopt a bourgeois or a proletarian standpoint, or advocate individualism or socialism. It is also small wonder that the various writers overlap the boundaries of the classification, as Sombart quite freely notes.

The three types of economics are designated by the terms: *richtend*, *ordnend* and *verstehend*. The first is normalising economics: the economics of what is right. The second is an economics concerned with what is, and with systematising it in natural laws modelled after the laws of the behavior of external nature as formulated by the natural sciences. The third is economics which asks not merely how, but why. It

1. *Die Drei Nationalökonomien*, by Werner Sombart. Munich, 1930: Duncker & Humblot, pp. xii, 352.

is a science of social mind (*Geistwissenschaft*). And because it is a science of mind it can proceed by the method of direct understanding or insight, as natural science cannot. Mind can know the essence of mind, as it cannot know the essence of matter; and hence social science is not limited, as natural science is, to a systematising of sequences of phenomena. It can understand its material, as natural science does not claim to do. For natural science, such an attempt would be metaphysical, not scientific; for social science it is quite within scientific bounds, so long as social science is dealing with the material of the human spirit.

Normalising economics includes, first, the scholastics, from Aristotle to Othmar Spann; tho Sombart also grants Spann credit for significant contributions to the economics of "understanding." Then come the harmonists, from Quesnay to Gossen and Wieser, including socialist writers. The third division consists of the "rationalists," including von Thünen, Proudhon, Rodbertus and Gustav Cohn.

Systematising economics includes most theorists. Its great spokesmen of method are John Stuart Mill, Cairnes, and Carl Menger; and it is the only group which has figures so outstanding in the field of method. Most of the harmonists appear again in this second division, along with Karl Marx; also the Austrians. New faces appear, however, under the heading of "relationists" — the Cournot-Walras-Pareto line of succession.

The economics of understanding is in its infancy, its constructive period beginning in the twentieth century, and its exponents so far being few. They include von Gottl, Spann, Max Weber and Sombart himself. The groundwork had previously been laid, however, by students from other sciences. In its development, both *Psychologismus* and *Historismus* are stumbling-blocks. Sombart's ideal is a method which rejects all psychology modelled after the natural sciences, and which, while using historical material, is not mere history.

His complete exclusion of the Austrians from this highest category of economics seems hardly necessary on purely logical grounds. Logically, they seem to belong in the economics

which follows the method of direct insight into human nature, in the subdivision devoted to pure theory. They did not, however, study the social mind, and so, presumably, did not achieve *Geistwissenschaft*. Sombart criticises psychological economics because the psychology is of the wrong sort, modelled after the natural sciences: *ordnend* and not *verstehend*. This criticism presumably applies to the Austrians, tho most modern readers would absolve their psychology of the stigma of being scientific, or of being borrowed from "scientific" psychologists! They also, apparently, committed the error of treating their theories as final products — as laws — rather than as tools of analysis; which is the proper and subordinate place of such theories. Perhaps the fact is simply that Sombart's differences with the Austrian method are so outstanding that they need no definition or emphasis, while his differences with the Historical economics are not so obvious; and that he has stressed in this volume the feature of his method which marks it off from the historical, because that distinction most needed emphasis. Deliberately or not, his classification works to that end.

In any case, the reader is left in no doubt as to what Sombart stands for and what he opposes. Pure theory deals with fictions, and the fictions he prefers are of a bolder sort than the Austrian speculations. He speaks for the analysis of economic society into its necessary elements, the determination of all possible species of such elements, and the recombining of them into all possible (humanly compatible) combinations. The whole process results in nothing less than an array of all logically possible economic systems. Whether these are found historically in pure form does not matter; but their use is to give an understanding of the rationale of actual historical systems. Here Sombart refers to his *Ordnung des Wirtschaftslebens*. Such logical systems would not naturally be found in pure form, because, as he notes elsewhere, an economic system always grows up within the framework of an earlier system, and declines to the accompaniment of the growth of a younger system within its framework. Only in its middle epoch of maturity are its principles approximately dominant.

Understanding of fact, as distinct from the fictions of theory, must always be historical in character, tho not mere history. It is causal, and genetic. Motives are true causes, and their study yields laws of various grades: laws of possibility, of probability and of necessity. Here we touch on the crucial questions of the scope and competence of the method, and at this strategic point the reader might wish for a more detailed and specific elaboration. This is especially true in view of the admitted existence of "senseless" conduct, and conduct forced by external circumstance, which set limits on the realm of understanding. One wonders how degrees of probability within this realm are to be determined.

In the structure of economic thinking as a whole, there is room for each of the major types. Normalising economics has its place in the realm of economic philosophy. The economics modelled on natural science has its place within the realm of economic science in cases where the nature of the subject-matter requires it, being material, or where an understanding of causal necessity has not yet been attained. The latter, however, is always the goal. To economics as an art, both philosophy and science contribute.

The relation of science to art is less direct than with natural science. Economic science can, however, suggest problems, bring order into the heads of practical men, and stake out the limits of what they can do. In this way it can serve the ends of life; but not in this way alone, for an understanding of things human is of value in its own right and enriches life without regard to tangible results. In this respect Sombart places the human sciences on a higher level than the natural sciences, whose only service to life is to enable man to control his world and gain his ulterior ends. This sharp distinction is one which few natural scientists would be likely to accept.

Such are the general outlines of Sombart's system. Any outline necessarily passes by much that deserves and invites comment. The scheme is not only comprehensive, but remarkably elastic, allowing scope for most types of economic thinking. If Sombart's interest had been less occupied with the broad perspectives of change in institutions and in domi-

nant ideas, and more with the specific operations of parts of a given economic system, the emphasis might well have been different; tho that is no matter for regret. Perhaps the main thing is that he has spoken boldly for the scientific validity of theoretical methods adapted to grappling with living historical realities. Rejecting the older system-theories, he remains a theorist. He does not take refuge in mere economic behaviorism.

The amazing threefold symmetry which runs through the work from the title to the smallest subdivisions of sections might suggest a formal or *a priori* structure divorced from applications. But such is not the case. His categories are not empty pigeon-holes, but are definitely related to his own economic thinking. And they are presented in a style of real literary merit, at times vivid and trenchant. The reader may not agree with all of Sombart's conclusions, but he can hardly fail to profit by following the treatment of fundamental problems by a mind of unusual scope and very positive convictions.

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NOTES AND DISCUSSIONS

THE MOTIVES OF INVENTORS

WHAT are the motives which urge the inventor? Money has often been mentioned as the outstanding objective. The perception of a need and the joy of inventing are also mentioned frequently. In order to throw light on this question, first hand information was obtained from a group of over seven hundred inventors including the most active and important in this country, such as Elihu Thomson, Reginald Fessenden, John Hays Hammond, Miller Reese Hutchinson, John O'Connor, Lloyd G. Copeman, Henry Wise Wood, S. W. Rushmore, Reuben Benjamin, and others of similar prominence. An idea of the inventive activity of the entire group can be gained from the fact that they have been granted on the average 39.3 patents each. Many, particularly those just mentioned, have over a hundred patents to their individual credit. The inventors were asked "What motives or incentives cause you to invent?" Table I gives a summary of the frequencies of the replies.

TABLE I

FREQUENCY OF MOTIVES OR INCENTIVES MENTIONED BY 710 INVENTORS

Love of inventing	193
Desire to improve	189
Financial gain	167
Necessity or need	118
Desire to achieve	73
Part of work	59
Prestige	27
Altruistic reasons	22
Laziness	6
No Answers	33

An inspection of the table shows that the love of inventing is the motive most frequently mentioned. The sheer joy of inventing, resulting from an irrepressible urge to invent has been felt as the greatest urge by the inventors of this study. The pleasure resulting from manipulation and experimentation, the satisfaction of solving problems, and the desire to create, were considered sufficient in themselves as objectives by the inventors.

The results given in Table I confirm the statements made by Professor Taussig in his book *Inventors and Money-makers*. "One thing stands out conspicuously: the race of contrivers and inventors does obey an inborn and irresistible impulse. Schemes and experiments begin in childhood, and persist as long as life and strength hold. It matters not whether a fortune is made or pecuniary distress is chronic: there is increasing interest in new dodges, unceasing trial of new devices.

"Cartwright was in difficulties most all his life; yet he never relaxed his interest in any and every sort of mechanical device. Edison made fortunes and lost them and made them again; but throughout he remained the same amazing and persistent contriver. And it would seem that no satisfaction from pecuniary success or wordly recognition equals the absorbed interest of trial, experiment, novel problems, happy solutions. . . .

"Their biographies (of inventors) show that they were constantly experimenting on all sorts of schemes, promising and unpromising; sometimes with money-making intent, sometimes in the spirit of scientific research, and sometimes merely in sport."¹

These remarks apply not only to the prominent inventors of the past, but as the results of the present study show, they apply with equal force to the present day active inventor. It is rare that inventors make a single invention. They are recidivists, constantly planning and designing new inventions.

1. F. W. Taussig, *Inventors and Money-makers*, New York, Macmillan, 1915, pp. 21-23.

No sooner is one completed than others are planned forthwith.

The desire to improve existing devices comes a very close second to the love of inventing, being as it is closely related to the love of inventing as one of its phases. The objective of most inventors today is to make things better, cheaper, and more efficiently.

Financial gain is the third most frequently mentioned motive. A great deal has been written on money as the incentive to invention. Many people believe that it is the uppermost and most important urge to invent. We find, however, that this is not the case with the inventors here studied. It is difficult, of course, to evaluate the frankness with which these answers were made. Assurance was given in the letter accompanying the questionnaire that the replies would be kept confidential and used for statistical purposes only. Very little evidence was found in the replies to indicate any lack of sincerity.

We must bear in mind that the mere love of inventing would in itself often be insufficient to bring an invention to fruition. Before any invention is perfected and marketed much money must be spent in developing and perfecting the original mental conception. The inventor either must spend his own money or interest business men in his invention. In either case, unless there is a prospect of gain, the chances are that no money would be spent in developing the invention to a practical basis.

Professor Taussig, like others, refers to the instinct of contrivance. In recent years the term "instinct" has come into disrepute in these discussions, not so much because it is without significance as because it was used as a means to hide our ignorance of the ulterior problems. As Hollingworth has stated: "Of one thing we can be reasonably certain. This is that most of the 'instincts' attributed to man are instead early acquired and well-nigh universally established habits. Thus it is often said that men instinctively seize, collect, hoard, and struggle to retain whatever they get their hands upon. This 'collecting instinct,' 'native acquisitiveness,'

'property sense,' 'selfishness,' and so on is then cited as an inherited propensity upon which many social institutions are based.

"The so-called human instincts, at least, are in the main only learned techniques for the alleviation of such wants. They are habit devices for the elimination of annoyances, the satisfaction of cravings, in a world chiefly characterized by poverty of commodities. Fighting, hunting, courting, gregariousness, curiosity, and all the other honored 'human instincts' seem similarly accountable."²

And yet, altho the inventor may not be driven by the so-called instinct of contrivance in the psychological or biological sense, there is no question that he is impelled by a powerful bent or disposition to contrive, which for the purpose of the social and economic student, acts like an instinct. Inventors differ from non-inventors not indeed in possessing a peculiar instinct, but nonetheless in the nature of their psychological reaction to deficiencies in man's handiwork. The tendency of the non-inventor is to "cuss" deficiencies in his environment, whereas the bent of the inventor is constructive criticism. He is characterized by an innovating and "this is the way to do it" attitude. One of the important characteristics of the inventor is his ability to recognize industrial problems and needs, actual or latent, as well as the possession of native ingenuity in utilizing his bag of tricks toward contriving something to satisfy the needs.

The inventor is essentially an individualist, an innovator, a leader, a non-conformist, a radical in the world of matter. He is forever dissatisfied with what he finds around him and is continually seeking to improve everything. He finds great joy in changing and altering old devices or creating new ones. Like other creative workers, he experiences at an early age an irrepressible and deep-seated urge to create. The satisfaction of this urge, often accompanied by astonishing persistence in the face of obstacles, is a source of deep gratification and pleasure. This desire for creative expression, coupled as it

2. H. L. Hollingworth, *Psychology, Its Facts and Principles*, New York, Appleton, 1928, p. 336.

commonly is with the incentive of gain, has given our greatest inventions.

Yet inventors, having the same needs and wants as their fellow beings, and living in an age dominated by money standards, cannot ignore the necessity of earning money, even tho they may feel that the primary incentive to invent is the mere love of inventing. Information relating to the livelihood of inventors throws an interesting light on this side of the question. The following table shows the results of the replies to the question "Do you earn your livelihood by inventing?"

TABLE II

LIVELIHOOD OF INVENTORS

	Number	Per cent
Earn livelihood by inventing	265	38.2
Do not earn livelihood by inventing ...	271	39.1
Partially	158	22.7
No answer	16	
<i>Total</i>	710	100.0

When 38 per cent of the inventors earn their livelihood thereby, it would seem the prospect of financial gain is, after all, an important factor.

Practically all of the inventors of this study were also found to be married, as shown in Table III.

TABLE III

MARITAL STATUS OF 710 INVENTORS

Married	643
Not married	32
Widower	9
Divorced	2
No answer	24
<i>Total</i>	710

The extremely high proportion of married inventors would tend to make even more clear the importance of the monetary reward to the inventor; the marital status definitely increases his economic needs.

In this connection it is interesting to quote from Hart. "A group of graduate students at Bryn Mawr made a study of 171 men who had made significant contributions to mechanical invention. The hope of making money from the invention was noted only five times in the material located relative to these inventors, while the joy of manipulating materials, of experimentation and exploration, appeared in connection with 66 different inventors. Next most important in the apparent motivation of inventors is the perception of a need to be met — a problem to be solved. Not a reward to be won at the end of the struggle, but the pleasure of the inventive process, the zest of pitting one's power against a puzzling obstacle, the fun of using one's mental and mechanical abilities — in a word, the joy of functioning — is the driving power that keeps the typical inventor going."³

The inventors mentioned in Hart's study were taken from Kaempfert's *Popular History of American Invention*. Most of them were active fifty or more years ago, so that it was not possible to obtain data from the men themselves, as in the present inquiry. The results of Hart's study are more unqualified in finding the main motive of inventors to be the joy of exploration and manipulation. This is probably due to the fact that the data were obtained from biographical material of a popular kind, which would probably dramatize and glorify the inventors. The results cannot be considered very trustworthy or significant.

Returning to Table I, we find that necessity, need, or part of work (some obstacle?) are frequently mentioned as an incentive by the inventors of this study. The psychological study of the mental processes in inventing clearly shows that a necessity or need really initiates the entire process. We cannot, after all, select any motive as more important than another. The motives of inventors as well as non-inventors are a highly complex system, made up of many forces pulling in different directions. As Professor Taussig says: "The case, in truth, is almost invariably one of mixed motives. That very Fulton who bargained so shrewdly in selling his inven-

3. H. Hart, *Science of Social Relations*, New York, Holt, 1927, p. 19.

tions, good and bad, was unquestionably sincere, tho doubtless exuberant of emphasis, when he wrote: 'Altho the prospect of personal emolument has been some inducement to me, yet I feel infinitely more pleasure in reflecting on the immense advantages that my country will draw from the invention' (of the steamboat). Edison had the same mixed feelings; further complicated by an influence which has become of growing strength in modern times, professional pride and professional recognition. It is rare that a man feels a single impulse so strongly that the others are pushed aside and rendered inoperative; and it is rare also that a man in whom one trait is highly developed manifests a similar extreme with any other."⁴

In the present inquiry many and varied motives were mentioned by the inventors, such as the desire for achievement, altruism, prestige, superiority, fame, praise, recognition, honor, leisure, influence, power, and so forth. They were mentioned with little frequency, however, as compared with the four major motives — love of inventing, desire to improve, financial gain, and necessity or need.

Inventors, after all, are practical men who express their ideas in physical form at the expense of time and money. It is, therefore, only natural that they should not be content with honor or glory alone as a reward. Even tho the greatest and immediate reward of the inventor is the sheer joy of the work, inventing is a business undertaken with a hope of profit. The experience of a need or necessity usually initiates the inventive process; in order to bring it to successful completion the dynamic spur of profit, coupled with the joy derived from creating or improving, is essential. From the psychological standpoint, however, it remains true that the love of inventing is the most powerful motive of inventors.

4. *Inventors and Money-makers*, New York, pp. 48-49.

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PUBLIC UTILITIES AND THE INCOME TAX

I

THE Federal corporate income tax act of 1916 (and the acts thereafter) presented a new problem to utility commissions — whether to regard income tax as a deduction from net income to be borne by stockholders, or an expense of operation to be paid by consumers. The utilities contended that the payment of a tax on the fair return reduced the return to the point where it was non-compensatory; and that to maintain Constitutional guarantees on utility property, the tax must be allowed as an expense. On the other side it was contended that Congress expected the utilities to bear the tax; that the stockholders were permitted to deduct from their taxable income dividends on which a corporate income tax had been paid; and that since the tax was levied on all businesses, regulated and competitive, to permit utilities to shift the tax to consumers would be to place regulated business in a favored position.

This problem, arising at our entrance into the war, added another difficulty to the war-time regulation of utilities. In the five years in which the question was in dispute, commissions and courts were divided upon it. At the outset, the tendency was to consider the income tax like any other tax, and to allow it as an operating expense. Some commissions relied on the similarity of the gross receipts tax which had invariably been allowed as an expense, altho commissions did not approve the raising of revenue by a tax on consumption of utility service.¹ In the latter part of 1918, when the move-

1. See *Re Beaver Power and Light Company* (Idaho), P. U. R. 1915 B, 281; *Dittus v. Public Service Company* (Ill.), P. U. R. 1918 A, 552. When the gross receipts tax came into use, utilities were unregulated monopolies and the incidence of the tax was different from what it became later. While the tax was shifted in part to consumers, to a large extent it fell upon utilities. Cf. *Re United Railways Company* (Md.), P. U. R. 1920 A, 1.

ment to maintain low utility rates was growing, many commissions disallowed the income tax as an expense. They relied on the intention of Congress to have the tax fall on stockholders, and on the provision in the act that, for the purpose of computing taxable income, the tax should not be regarded as an expense.

Before 1922, few commissions allowed the tax as an operating expense. The New Jersey Commissioners in the Commonwealth Water case, 1918, held that the tax was a proper charge to operating expense; but the board did not continue this policy.² The California Railroad Commission in the Western States Gas case, 1918, ruled that unless the tax were allowed as an expense, the return would be reduced below the point of compensation.³ In 1922 the commission temporarily reversed its ruling, but in 1923 returned to its original policy. Only one other commission — that of Wisconsin — followed this rule to any extent.⁴ In 1920 this view was strengthened somewhat by the ruling of the Interstate Commerce Commission that the tax, so far as it related to railroads under the Commission's jurisdiction, would be regarded as an operating expense.⁵ Despite this, the tendency was to disallow the tax as an expense.

Most commissions did not allow the corporate income tax as an operating expense before 1922. The Indiana Commission in the Indianapolis Water case, 1918, was among the first to hold the tax to be a charge to income rather than to expense. Thereafter, until 1922, the Indiana Commission followed this ruling.⁶ The New York Commissions, despite an

2. P. U. R. 1919 B, 527. The excess profits tax was not allowed as an expense. The question of fair return was not involved, since this tax applied only to the income above the fair return. In this it resembles the recapture provision of the Transportation Act of 1920.

3. P. U. R. 1919 B, 485.

4. *Re Milwaukee Electric Railway and Light Company*, P. U. R. 1920 A, 361.

5. Cited, P. U. R. 1921 A, 399. It must be borne in mind that the minimum fair rate of return for railroads is set by Act of Congress.

6. P. U. R. 1919 A, 448. See also *Re Home Telephone Company*, P. U. R. 1919 F, 131; and *Re Indianapolis Street Railway Company*, P. U. R. 1921 B, 133; and P. U. R. 1921 D, 210.

unfavorable Federal court decision, maintained the same policy until the decision of the Supreme Court in the Georgia case, 1923.⁷ The commissions of Illinois and Pennsylvania were also prominent among those that did not allow the tax as an expense.⁸ In 1920 the Illinois Commission, commenting on the ruling of the Interstate Commerce Commission, said that "until it was instructed by the courts to the contrary," it would adhere to its policy of not allowing the tax as an expense.⁹

This difference in view as to the accounting of the corporate income tax extended even to the Federal courts. Judge Hand, in the second Consolidated Gas case, 1920, held that the tax was a proper charge to operating expense.¹ Judge Mayer, in the New York and Queens Gas case, decided the same year, held that the tax ought not to be charged to operating expense.² In Indiana, where the commission did not allow the tax as an expense, it was reversed by the Federal court. In the Home Telephone case, 1922, the master for the district court said that he was "of the opinion that industrial enterprises are shifting the income and excess profits taxes to the consumer and therefore utilities ought to be permitted to do the same."³

The matter finally came to the United States Supreme Court. In the Galveston case the master recommended to the Federal court that the tax be allowed as an expense. Judge Hutcheson did not follow the recommendation. On appeal to the Supreme Court, 1922, the district court was overruled. Mr. Justice Brandeis, for the Supreme Court, said:⁴

7. *Re Iroquois Natural Gas Company*, P. U. R. 1919 D, 76.

8. *Re Public Service Company of Northern Illinois (Ill.)*, P. U. R. 1919 D, 809; *Montrose v. Consumers' Water Company (Penna.)*, P. U. R. 1920 C, 543.

9. *Re Freight Carriers (Ill.)*, P. U. R. 1921 A, 399.

1. P. U. R. 1920 F, 487.

2. P. U. R. 1921 A, 530.

3. *Home Telephone Company v. Public Service Commission*, P. U. R. 1922 A, 478.

4. *Galveston Electric Company v. Galveston*, P. U. R. 1922 D, 159.

... all taxes which would be payable if a fair return were earned are appropriate deductions [from income that must be allowed as expense]. There is no difference in this respect between state and Federal taxes or between income taxes and others. But the fact that it is the Federal corporate income tax for which deduction is made must be taken into consideration in determining what rate of return should be deemed fair. For, under §216, the stockholder does not include in the income on which the normal Federal tax is payable dividends received from the corporation. This exemption is, therefore, in effect, part of the return on the investment.

The language of Mr. Justice Brandeis in this case was not clearly understood, and the effect of the decision was therefore minimized. The Illinois Commission reversed its policy and allowed the tax as an expense.⁵ But for the most part, commissions misinterpreted the court's opinion, and did not allow the tax as an expense. The California Commission reversed its policy, stating that it "appears at this time from a careful study of court decisions and the act providing for this tax that this tax is not to be included in operating expenses."⁶ The same error was made by the New Jersey Commissioners in the Atlantic City Sewerage case, and by other commissions.⁷

The vagueness of the language of the Galveston decision was clarified in the Georgia case, in which Mr. Justice Brandeis again delivered the opinion of the court. The Georgia Commission, in the original hearing, allowed the tax as an expense. On appeal to the Federal district court the commission was reversed; but the Supreme Court reversed the district court and approved the decision of the commission.⁸ The language of the court was clear and definite—the Federal corporate income tax must be allowed as an operating

5. *Re Monmouth Telephone Company*, P. U. R. 1923 B, 858.

6. *Re San Joaquin Light and Power Corporation*, P. U. R. 1922 D, 595.

7. P. U. R. 1923 A, 734. See also, *Re Midwest Power Company* (N. Dak.), P. U. R. 1923 A, 816; *Commonwealth of Virginia ex rel Newport News v. Newport News Light and Water Company* (Va.), P. U. R. 1923 D, 91; *Re Potomac Electric Power Company* (D. C.), P. U. R. 1923 D, 579.

8. *Georgia Railway and Power Company v. Railroad Commission*, P. U. R. 1923 D, 1.

expense for utilities, but this must be taken into consideration in determining the gross rate of return. Thereafter, the income tax was held to be a proper charge to operating expense. The commissions of Pennsylvania, California and other states adopted the rule.⁹

II

As in all public utility problems there are two aspects, economic and administrative, of the problem of income tax accounting. In the long run, under proper administration, the net return to utilities for the use of their property must be the same under either method of accounting. Whether rates are based on net return and the income tax is allowed as an expense, or are based on gross return and the income tax is regarded as a deduction from gross income, utilities must in the long run be allowed the supply price of their capital. A method of accounting income tax that reduces the net return below the supply price of utility capital will eventually bring about a relative scarcity in the supply of utility services; and commissions will have to increase the return to the supply price for the needed quantity of utility service. In discussing the accounting of the income tax a year before the Galveston decision, the Wisconsin Commission emphasized this very point. "The utility, under normal conditions, is entitled to a fair return. If from the net income which makes up such return, income taxes are deducted, the remainder must still be sufficient to be compensatory or the return will be insufficient to permit of the development of the industry."¹

The adjustment of the return to the supply price of utility capital is by no means automatic, and it is possible for the

9. *Phial v. Philadelphia Rapid Transit Company* (Penna.), P. U. R. 1923 E, 190; *Re Southern California Edison Company* (Calif.), P. U. R. 1924 C, 1; *Re Red River Power Company* (N. Dak.), P. U. R. 1923 E, 534; *Re Idaho Power Company* (Idaho), P. U. R. 1924 C, 731; *Re Pacific Telephone and Telegraph Company* (Ore.), P. U. R. 1924 D, 39; *Re Bisbee-Naco Water Company* (Ariz.), P. U. R. 1924 D, 666; *Federation of Citizens' Associations v. Chesapeake and Potomac Telephone Company* (D. C.), P. U. R. 1924 D, 152; *Public Utilities Commission v. Naragansett Electric Lighting Company* (R. I.), P. U. R. 1925 D, 545.

1. *Re Burkhart Milling and Electric Power Company*, P. U. R. 1921 D, 783.

return to be above or below the normal return for several years at a time. In such a period the method of accounting the income tax will make considerable difference in the net return. If the fair rate of return in competitive industry for a representative business is 8 per cent of the fair value, of which 1 per cent is paid as income tax, it may be assumed that the same rate is a fair return for a utility of equally efficient management. It will be indifferent to the utility whether its return is computed by allowing the competitive gross rate of 8 per cent out of which the utility will pay income tax of 1 per cent, or whether it is allowed a net rate of 7 per cent and the 1 per cent income tax is included as operating expense. Under either method the net rate of return to utility stockholders will be 7 per cent of the fair value. If now the income tax is increased, the method of computing the fair return becomes important. Where the gross return method is used the tendency will be to allow the same gross rate of return until it is seen whether the gross rate in competitive industry has risen. Where the net return method is used the tendency will be to allow the same net rate of return and to increase the expense allowance until it is seen whether the net rate in competitive industry has fallen. This short-run difference between the two methods results from the tendency of the incidence of a tax to be, for a time, at the point at which it is levied; and this is even more likely with an income tax than with another tax. Under such circumstances the gross return method more nearly conforms to competitive conditions.

There is another danger in the use of the net return and expense method of accounting the tax — the danger that error will arise. In approving the expense method, Mr. Justice Brandeis said that the allowance as expense "must be taken into consideration in determining what rate of return should be deemed fair." Just what consideration must be given the court did not say; but it is evident that if competitive industry is not to be placed at a disadvantage, the consideration to be given to the allowance of the tax as expense should be such as to make the net rate of return the same regardless of which method is used. Since the court nowhere

explicitly stated this rule, there is the danger that too little consideration will be given to reducing the gross rate of return by the full amount of the tax that has been included as expense. It is not inconceivable that the expense method will be used to justify a higher net rate of return than would otherwise be allowed. In the second Monroe Gas case the court said that "the Federal income tax paid by the corporation [but allowed as expense] does not justify approving a dividend (earned) rate of substantially less than would otherwise be compensatory."² Unless the gross return method is used, consumers and even commissions are apt to be misled in comparing the return in regulated industry with the return in competitive industry.

From an administrative point of view, each method offers advantages under different conditions. Where a fixed rate of return is prescribed by law or by contract, the expense method is superior. In such cases the simplest method is to allow the prescribed rate of return and to consider the income tax an expense. This was undoubtedly the reason for the Interstate Commerce Commission's ruling that the rate of return fixed by the Transportation Act of 1920 must be used as the net rate and the income tax charged to operating expense. But the rate of return is prescribed in very few instances. In nearly all cases commissions are required to allow a fair return, commonly understood as implying the usual competitive return for business of equal efficiency. In determining this it is more convenient to fix the gross return—the rate ordinarily understood in competitive business. To use this basis, therefore, is to keep the method of accounting utility income in accord with the custom in competitive business. Whether considered from an economic or administrative point of view, the gross return method is preferable.

2. *Monroe Gaslight and Fuel Company v. Michigan Public Utilities Commission*, P. U. R. 1926 D, 13.

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STOCK DIVIDENDS, LARGE SCALE BUSINESS, AND
CORPORATE SAVINGS — A CRITICISM

THE conclusions reached by Mr. Jewkes in his note on "Stock Dividends in Large and Small Companies,"¹ do not appear to be supported when his basic evidence is examined in detail. His figures exaggerate the amount of corporate savings, are not classified in a manner to cover the largest companies, and because of the bias in the sample are open to an interpretation essentially different from that which he gives.

The exaggeration of savings results from an incorrect use of figures reported by the Federal Trade Commission covering the total dividends and surplus for certain small groups of companies over a seven-year period. In measuring savings, Mr. Jewkes has assumed that out of the "total surplus available for distribution" that part which remained undistributed represented savings for the period. Unfortunately the "total surplus," as reported by the Commission, includes surplus already accumulated at the beginning of the period as well as earnings made during the period. The "total surplus" for the sample of 2971 corporations amounted to \$8,459,000,000, whereas the "surplus attributable to the operations of these corporations" in the seven years totalled but \$5,600,000,000.² Savings during the period amounted to \$2,687,000,000 instead of \$5,562,000,000, the figure on which Mr. Jewkes's percentage is based. It therefore appears that this group of companies saved out of their net income, not the 66 per cent which he indicates, but only 48 per cent.³ Furthermore, in using

1. John Jewkes, *Stock Dividends in Large and Small Companies*, *Quarterly Journal of Economics*, xlv (February 1931), 352-357.

2. Federal Trade Commission, *Stock Dividends*, p. 11.

3. For the sample of 566 companies the corresponding reduction is from 65 per cent to 46 per cent while 80 per cent of savings was represented by stock dividends instead of "nearly one half."

this figure it must be kept in mind that it applies to companies which were very much above the average in prosperity and therefore likely to save a larger proportion of their income. It should not be regarded as typical of corporations which did not declare stock dividends during the period, or roughly 95 per cent of all corporations.

In seeking to compare the growth of small and large corporations, Mr. Jewkes fails to appreciate the significance of size in present-day America. He groups together all corporations with capital stock over ten million dollars. Yet a corporation with about ten million of capital stock is small in comparison with the modern big corporation. There is much to indicate that the economies of a ten or twenty million dollar corporation are quite different from those of a fifty or one hundred million dollar company. This is clearly shown for Mr. Jewkes's own table when figures are compiled for an additional group of larger corporations, for example, one composed of all those companies reported by the commission with capital stock of over forty million dollars in 1920. Only thirty companies are reported in this group but their relative importance is shown by the fact that together they issued 24.2 per cent of all the stock dividends compiled by the commission. The table with the addition is given on the next page.

The most significant change is that with regard to the figures concerning growth. The tendency for the rate of growth to decline as the size of company increases is sharply broken when the very largest companies are reached. The thirty largest companies show an average growth of 90 per cent whereas companies with five million capital or more (mostly between five and forty) show a considerably lower rate of growth. Clearly by his own criterion, Mr. Jewkes's conclusion (p. 356) "that increased size brings increased resistance to further growth" does not apply to the truly large corporations.⁴

4. We cannot enter here a criticism of the use of capital stock as a measure of size, the use of the average growth for each group of companies rather than a median growth, the use of 1920 instead of 1926 as the base year for grouping according to size, and the failure to mention the importance of subsidiary companies whose size and growth would

INCREASE IN CAPITAL STOCK, AND STOCK DIVIDENDS REPORTED
BY 1,030 COMPANIES IN SIZE GROUPS, 1920-26¹

Size group by capital stock in 1920 (dollars)	Number of corpo- rations	Total capital stock (millions of dollars)		Total stock divi- dends reported (millions of dollars)	Percentage increase of capital stock, 1920-26	Percentage of stock dividends to increase in capital stock
		1920	1926			
0- 40,000	358	5.0	35.7	21.9	614	71
40- 80,000	157	8.8	31.2	16.0	255	71
80-150,000	113	12.7	39.4	20.8	210	78
150-300,000	90	18.7	60.1	33.2	222	80
300-600,000	76	32.8	78.9	31.8	141	69
600,000-1,000,000	50	39.2	99.3	50.2	153	84
1-5,000,000	56	127.2	336.7	83.5	165	40
5-10,000,000	50	334.6	579.2	194.3	73	79
Over 10,000,000	50	1473.4	2310.6	698.1	57	83
Over 40,000,000	30	2370.4	4499.4	1515.5	90	71

1. This Table is Table II of Mr. Jewkes (p. 355) for 1000 corporations (companies), with addition of figures for 30 corporations with capital stock over \$40,000,000, compiled as indicated in text. Presumably a few corporations included in the 50 with capital stock over \$10,000,000 were so large as to be included also in those over \$40,000,000.

When he comes to interpret his figures, Mr. Jewkes appears to regard the slower rate of growth of the larger companies as an indication of lesser efficiency.⁵ Disregarding the fact that his figures do not apply to the "largest" companies, is there not be entirely reflected in the capital stock of the parent, an influence which is vastly more important for the large than for the small companies.

5. Mr. Jewkes offers no support for his assertion that "as a concern grows, there will come a point at which increased size will bring decreasing efficiency" (p. 353). So far as the present writer is aware, studies of optimum size have dealt, not with the size of a concern, but with the size of a manufacturing or distributing unit. There would seem to be no justification for applying conclusions based on the size of a factory or store to a concern which may own a multitude of factories or stores. It is also necessary to distinguish between rate of growth and ultimate size. It is quite possible that a concern should grow so fast as to become inefficient, yet reach a size which would not be inefficient if it had been attained in a less hasty manner. Mr. Jewkes's assertion would be more acceptable if he had said that a concern may become inefficient if it grows too rapidly.

any justification for this criterion? Presumably he would reason that the slower growth of the larger companies showed an inability to absorb additional capital at profitable rates. If one considers the bias in his sample, however, a quite different explanation of the slower growth may suggest itself. The sample includes only companies which have shown earnings sufficient to warrant the declaration of a stock dividend. As a group, they are far above the average in profit-making capacity, as is indicated by the fact that the 10,225 companies reporting stock dividends included less than 3 per cent of all corporations, yet received at least 34 per cent of the net income of all corporations during the seven-year period.⁶ If, then, the sample used by Mr. Jewkes is not representative of all corporations but a selection of prosperous companies, it is only necessary, for explaining the slower growth of the larger companies, to assume that as corporations increase in size they tend to become more stable, *i.e.*, less subject to mercurial change in size either upward or downward. Since corporations declining in size have been practically excluded from the sample, the group showing the greatest amplitude of variation would be expected to show the greatest average growth. If, on the other hand, the sample had been a representative one, it is quite possible, not to say probable, that the losses of some small companies would so much outweigh the growth of other small companies that their average rate of growth would be less than that of the large companies. If such were found to be the case and if one accepted the measure of efficiency suggested above, one might conclude that on the whole the large companies tended to be more efficient than the small. In the figures presented by Mr. Jewkes there is, therefore, nothing incompatible with the greater efficiency of larger concerns, even if the comparative rate of growth be regarded as an index of efficiency. On

6. For the samples, the cash and stock dividends declared amounted to approximately \$13,600,000,000 (Report on Stock Dividends, p. 5) while the net income for all corporations in the seven year period as estimated by the National Bureau of Economic Research amounted to \$39,624,000,000 (W. I. King, *The National Income and its Purchasing Power*, Revised Estimates, p. 278).

the basis of his figures we might indeed conclude that, except with regard to the largest companies, "increased size brings increased resistance to further growth," but not that this resistance to growth is a necessary or even a probable sign of decreased efficiency.

Finally, on independent grounds it is open to grave question whether the ease of corporate saving is an important "temptation among the largest concerns to move on to dimensions which have little to justify them on the score of efficiency in the immediate future." The present writer has published elsewhere figures which tend to indicate that for the largest corporations as a group, the growth due to corporate savings is only approximately half that derived from the sale of new securities in the public markets.⁷ Their expansion would seem to be limited more by the difficulty of raising new capital than by the ease of saving out of income. The fact that their growth is in such large measure the result of new financing would seem to suggest either that the point at which these concerns as a group will become inefficient due to size has not yet been reached or, more improbably, that the flotation of new securities by an established concern has become almost as easy as corporate saving.

7. See "Growth in the Relative Importance of Large Corporations in American Economic Life," *American Economic Review*, xxi (March 1931) 10-42.

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